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SESSION 1856-57.

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DIRECTIONS TO THE BINDER.

TO FACE PAGE

PLATE I.—Map of the neighbourhood of Burnley 33

II.—Funeral Urn and Two Ivory Bodkins found at Catlow..... 42

III.—Remains found in the "Castle Hill," Penwortham 62

IV.—Metal Articles found in the "Castle Hill," Penwortham..... 67

V.—Maps to illustrate Commerce of the Medial East 120

VI.—Map showing proposed Railway and Steam Communication with India 120

VII.—Copy of Rubbing from the Tomb of Theodoro Paleologus ... 213

VIII.—Symbols of Liverpool Library 235

IX.—Ivory Diptych—Æsculapius and Hygeia ..... ~~251~~ 256

X.—Ivory Diptych—Flavius Clementinus 256

XI.—Sectional Elevation of High Pressure Vortex Wheel 280

XII.—Plan of High Pressure Vortex Wheel..... 280

XIII.—Fibula and Silver Bracelet..... 290

XIV.—Gold Bracelet and "Halse-ring" 290

XV.—Gold Ring money and Fibulæ 290

XVI.—Truncated Collar and Torque ..... ~~290~~ 285

Plates I, II, V, VI, VII and IX have been prepared by direction of the Council, at the expense of the Society.

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Vice-Presidents.

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CONTENTS.

[Papers marked thus * are illustrated. Those marked thus + have been abridged.]

PAGE.

On the Language of Lancashire under the Romans. By R. G. Latham, M.A., M.D., F.R.S. 1

On the importance of testing Chronometers before they are used at Sea, with examples to show how their most common faults may be detected. By John Hartnup, F.R.A.S., V.P. 11

* On the Battle of Brunanburh, and the probable locality of the conflict. By T. T. Wilkinson, F.R.A.S. 21

Notes on the Yak, or Grunting Ox, and other Ruminating Animals from Central Asia. By T. J. Moore, Esq. 43

* The Castle Hill of Penwortham. By Rev. W. Thornber, A.B., Trin. Col. Oxon. 61

On Resemblance, Imitation and Plagiarism in English Poetry. By David Buxton, M.R.L.S. 77

The Faussett Museum, as affording materials for History. By John Robson, M.D. 85

On some Fossil Trees recently discovered at Burnley. By T. T. Wilkinson, F.R.A.S. 99

On Comparative Philology, considered as an Aid to History. By Rev. A. Ramsay, M.A. 105

* Commerce of the Medial East. By John Locke, A.B., F.S.S. 119

On the Perfect r-Partitions of $r^2 - r + 1$. By Rev. T. P. Kirkman, A.M., F.R.S. 127

On the History of the English Language. By Thomas Wright, M.A., F.S.A. 143

On the Lepidopterous Insects of the District around Liverpool. By Charles Stewart Gregson 165

On the People of the English Lake Country, their origin, history and character. By A. Craig Gibson, Esq. 181

On the Population of Lancashire and Cheshire, and its local distribution during the Fifty Years 1801-51. By J. T. Danson, V.P. and T. A. Welton, Esqs. 195

PAGE.

* A Visit to the Tomb of Theodoro Paleologus. By John Thomas Towson, Esq. 213

Results of an Examination of the Records of the Liverpool Self-Registering Tide Gauge, for the years 1854, 1855, and 1856. By Lieut. Murray T. Parks, R.N. 223

† The Characters of Macbeth and Richard the Third, according to Shakspeare, compared. By James Stonehouse, Esq. 227

* Historical Sketch of the Liverpool Library. By P. Macintyre, M.D. 235

*† Remarks on Ancient Ivory Carvings. By Francis Pulszky, F.H.A. 245

List of Members ix

Proceedings, Ninth Session, 1856-57 259

Report presented at Annual General Meeting 259

Treasurer's Balance Sheet 261

Remarks on the Financial Position of the Society. By Rev. A. Hume, D.C.L. 262

Opening Address. By J. T. Danson, F.S.S. 266

† On the relation between the Material Progress of the United States and the Capital and Labour of Europeans. By E. Clibborn, Esq., R.I.A. 271

† On Binocular Vision and the Theory of the Stereoscope. By John Newton, Esq. 272

*† On a Vortex Wheel near Kendal, with remarks on Water Wheels. By George Grazebrook, F.S.A. 280

[Remarks on the Life and Writings of Thomas Hoggart, of Troutbeck. By A. Craig Gibson, Esq.] 285

[The Hoylake Antiquities. By Rev. A. Hume, D.C.L.] 289

Concluding Address. By Rev. A. Hume, D.C.L. 292

Appendix—

Extra Meeting;—Conversazioné at the Egyptian Museum 295

Special General Meeting;—Diploma to Rev. Dr. Thom 296

——— Address to William Brown, Esq., M.P. 296

——— Excursion to Manchester 298

——— Conversazioné at the Town Hall 298

Index 300

LIST OF MEMBERS.

SESSION IX, 1856-7.

The first List was dated 23rd November, 1848; all whose names appeared in it, are therefore Original Members. Those who have been enrolled as Mayors or Sheriffs have their year of office attached.

The letter P denotes that the Members in connexion with whose names it occurs, have read Papers before the Society.

Those whose names are printed in SMALL CAPITALS are Members of the Council; and in *italics* are Life Members.

Those marked thus * are Resident. The post town Liverpool is usually omitted.

A

23rd Nov., 1848. *Ainslie, Montague*, Grizedale, Hawkshead, Lancashire.
6th Dec., 1855. *Allcard, William*, 43, Upper Brooke street, Grosvenor square, London.
18th Sept., 1854. *Allport, William, 11, Dale street.
10th Feb., 1853. *Anderson, Robert Worrall, 23, Falkner square.
3rd May, 1849. *Anderson, Thomas Francis, Holly Lodge, Fairfield, and 3, Cable street.
4th Dec., 1856. Ansdell, John, St. Helens.
23rd Nov., 1848. Ansdell, Richard, 7, Victoria Road, Kensington, London.
15th Sept., 1854. Arrowsmith, P. R., The Ferns, Bolton.
11th May, 1854. Aspland, Rev. R. Brook, M.A., Dukinfield, Ashton-under-Lyne.
14th Dec., 1848. *Astley, John, Worrall Buildings, 11, New Wapping, and Rock Ferry, Cheshire.
4th April, 1850. Aston, Walter, Chadderton Hall, and Blue Boar Court, Cross street, Manchester.
P. 9th Oct., 1854. Atherton, Henry, Sutton, Prescot.
8th Nov., 1849. Atkinson, Fenton Robinson, Oak House, Pendleton, Manchester.
H. Sh. Cheshire, 1857. *Atkinson, William*, Ashton Hayes, Chester.
23rd Nov, 1848. *AVISON, THOMAS, F.S.A., Fulwood Park, Aigburth, and 18, Cook street, TREASURER.

B

23rd Nov., 1848. *Badnall, Rev. William, M.A., Wavertree.
P. 23rd Nov., 1848. *Baines, Thomas, Oakfield, Little Woolton.
8th June, 1854. *Banning, John Johnson, 20, Castle street.
Mayor Man., 1851-53. Barnes, Robert, Brookside, Manchester.
13th Dec., 1855. Barton, Henry Campbell, Fishergate, Preston.

6th Dec., 1855. *Batty Edward, 24, Stafford street.
P. 6th Dec., 1849. Beamont, William, Warrington.
21st May, 1857. *Bean, Edwin, Revenue Buildings.
30th Dec., 1854. *Bean, William, Revenue Buildings, and 56, Berkeley street.
10th Sept., 1854. *Bedford, James, Ph.D.
23rd Nov., 1848. *Bell, Henry, 16, North John street, and Grosvenor Road, Claughton, Birkenhead.
6th April, 1854. Bell, John Gray, 11, Oxford street, Manchester.
15th Nov., 1854. *Belshaw, John, Wason Buildings, 4, Harrington street.
P. 9th Dec., 1852. Benn, Edward, Belfast.
23rd Nov., 1848. *Bennett, William, Sir Thomas' buildings, and 109, Shaw street.
7th March, 1850. Birch, Sir Thomas Bernard, Bart., The Hazles, Prescot.
23rd Nov.. 1848. Birchall, Thomas, Ribbleton Hall, Preston.
23rd Nov., 1848. *Bird, William, 9, South Castle street, and the Dell, Rock Park, Rock Ferry.
4th March, 1852. Birley, Rev. John Shepherd, Halliwell Hall, Bolton.
P. 8th Jan., 1852. Birley, T. Langton, Carr Hall, Kirkham.
6th Dec., 1855. Black, J., M.D., F.G.S., 2, George's square, Edinburgh.
20th Sep., 1854. *Blackmore, William, 1, Exchange street West, and Sutton, Cheshire.
23rd Nov., 1848. Blackburne, John Ireland, The Hall, Hale.
26th Sep., 1854. Bloxam, Frederick William, Alliance Bank, Threadneedle street, London.
23rd Nov., 1848. *Blundell, Thomas Weld, Ince Blundell, Great Crosby.
P. 30th Dec., 1854. Bööck, Frederick Robert Paul, 86, Newman street, Oxford Street, London.
5th May, 1853. Booth, Benjamin Witham, Swinton, Manchester.
1st May, 1856. Booth, John Billington, Preston.
15th Dec., 1853. Bossi, Arthur, Paris.
31st Sep., 1854. Bostock, Rev. H., M.A., Grammar School, Warrington.
3rd Jan., 1856. *Bouch, Thomas, 1, Oldhall street, and New Brighton.
23rd Nov., 1848. *Boult, Francis, Rumford Place, and Devonshire Road, Claughton.
P. 23rd Nov., 1848. *Boult, Joseph, Harrington Chambers, and Grove Park, Lodge Lane.
8th Dec., 1851. Bourne, Cornelius, Stalmine Hall, Preston.
6th Dec., 1855. Bowes, John, Blue Coat School, Warrington.
29th Dec., 1854. *Boyd, Andrew, 21, Nile Street.
13th Nov., 1851. Brackstone, R. H., Lyncombe Hill, Bath.
15th Dec., 1853. Bradbury, Charles, Salford Crescent, Manchester.
23rd Nov., 1848. *Brakell, Thomas, 7, Cook street, and 23, Richmond Terrace, Everton.
30th Dec., 1854. Brent, Francis, Custom House, Hull.
9th March, 1854. *Bright, Henry Arthur, Sandheys, West Derby, and 1, North John street.
3rd May, 1849. Brooke, Henry, Forest Hill, Northwich.
6th March, 1851. *Brooke, Richard, jun.*, Norton Priory, Runcorn.
13th Sep., 1854. *Brounlie, Charles, 19, Tower Chambers.
4th Dec., 1856. Broughton, Frederick, Ulster Railway, Belfast.
11th Dec., 1856. Brown, Robert, Preston.
23rd Nov., 1848. **Brown, William, M.P.*, 7, Chapel street, and Fenton's Hotel, London.

6th Jan., 1853. *Brown, Rev. Hugh Stowell, 118, Chatham street.
23rd Sep., 1854. *Brown, John*, F.R.G.S., F.R.S. North. Antiq. Copenhagen, 3, Newcastle Place, Clerkenwell, London.
15th March, 1855. *Browne, G. Mansfield, 15, South Hill, Park Road.
11th Sep., 1854. *Burke, William, 160, Grove street.
23rd April, 1857. *Burlington, The Earl of*, D.C.L., F.R.S., Holker House, Kendal, and 10, Belgrave square, London.
17th Sep., 1854. Burnell, Rev. Samuel, M.A., Winwick, Warrington.
Mayor La., 1853-4. Burrell, John Stamp, Lancaster.
9th Dec., 1852. Bury, Edward, F.R.S., Croft Lodge, Ambleside.
P. 15th Dec., 1853. *Buxton, David, M.R.S.L., Principal of the Liverpool Deaf and Dumb Institution, Oxford street.
2nd Nov., 1854. Buxton, Edward, Principal of the Cambrian Deaf and Dumb Institution, Swansea.

C

23rd Nov., 1848. *Caine, Nathaniel, 12, Dutton street.
6th Dec., 1855. Calvert, F. Crace, F.C.S., M.R.A., Turin, Royal Institution, Manchester.
23rd Nov., 1848. *Campbell, Rev. Augustus, M.A., The Vicarage, Childwall, and 131, Duke street.
18th Dec., 1856. *Campbell, Captain William, R.L.A., North Battery.
4th April, 1850. *Carlisle, His Excellency the Earl of*, Lord Lieutenant of Ireland, The Castle, Dublin.
5th March, 1857. *Carr, Thomas, Lower Bebington, Cheshire.
23rd Nov., 1848. *Carson, Thomas, Talbot Chambers, Fenwick street, and 3, Northumberland terrace, Everton.
18th Dec., 1856. Cartwright, Samuel, Bushell place, Preston.
6th Dec., 1849. *Casson, William, 39, Parliament street, and 3, Great George square.
27th Sep., 1854. *Casey, George, Naylor street, and Walton.
26th Sep., 1854. *Cauty, Henry John, 31, Norton street.
23rd April, 1857. *Cavendish, Lord*, M.P., Holker House, Kendal, and 10, Belgrave square, London.
H. Sh. Chesh., 1855-6. *Chapman, John*, Hill End, Mottram-in-Longdendale.
14th Sep., 1854. *Chantrell, G. F., 150, Dale street.
21st May, 1857. Cheetham, John, M.P., Eastwood, Stalybridge.
Cheshire, the High Sheriff of, Vice-President, *ex officio*. (See Atkinson.)
2nd June, 1853. *Chester, The Lord Bishop of*, the Palace, Chester.
23rd Nov., 1848. *Clare, John Leigh, Richmond terrace, Breck road, and 11, Exchange buildings.
P. 23rd Nov., 1848. Clayton, Rev. George, M.A., Warmingham Rectory, Middlewich.
P. 12th Jan., 1854. *Clements, John, 6, Colquitt street.
21st May, 1857. *Clint, Francis A., 14, Dale street, and 2, Beech terrace.
10th Nov., 1854. Colston, Rev. John, Quarry bank, Wilmslow, Cheshire.
24th May, 1855. *Comber Thomas, 33, Edge lane.
23rd Nov., 1848. *Conway, John, Cable street.
8th Sep., 1854. *Cornish, Thomas, Revenue Buildings, Custom House.
18th Dec., 1856. Corser, Rev. Thomas, M.A., Stand, Manchester.
23rd Nov., 1848. Coulthart, John Ross, F.S.A. Scot., Croft House, Ashton.

31st Oct., 1854. *Cox, Henry, 15, Exchange alley North.
11th Dec., 1856. Cranage, Edward, Ph.D., Old Hall, Wellington, Salop.
21st May, 1857. *Cresswell, Hon. Sir Cresswell*, 21, Prince's gate, London, and Fleming House, Old Brompton, Middlesex.
4th Dec., 1856. Crory, William G., Belfast.
6th Dec., 1849. *Crosfield, Henry, 4, Temple place, and Edgemount, Edge lane.
6th Dec , 1855. *Cross, James L., 6, Sandon terrace, and Castle street.
1st Mar., 1855. *Crosse, John Norman, F.S.S., 10, Great Orford street.
23rd Nov., 1848. Crosse, Thomas Bright, Shawe hill, Chorley.
2nd May, 1850. Crossley, James, F.S.A., President of the Chetham Society, Booth street, Piccadilly, Manchester.
20th Nov., 1856. Croxton Thomas, Blue Coat School, Oldham.
P. 23rd Nov., 1848 *Cust, Major-Gen., the Hon. Sir Edward, K.C.H., D.C.L., F.R.S., Leasowe Castle, Cheshire, Claremont, Surrey, and Hill street, London, President.

D

8th Dec., 1851. Dale, Rev. Peter Steele, M.A., Mytholme Lodge, Hollins Green, Warrington.
8th Dec., 1851. *Dale, Robert N., Exchange court, Exchange street East.
23rd Nov., 1848. Danby, Rev. Francis Burton, M.A., Lancaster.
P. 29th Dec., 1851. *Danson, John Towne, F.S.S., Eldon Chambers, South John street, and Carnsdale House, Barnston, Birkenhead, Vice-President.
23rd Sep., 1854. *Davies, Comenius, 134, Paddington, Edge Hill.
6th Mar., 1856. *Daw, Robert, F.B.S.E., &c., 26, Hamilton square, Birkenhead.
P. 23rd Nov., 1848. Dawes, Matthew, F.S.A., F.G.S., Westbrooke, Bolton.
10th Feb., 1853. Dawson, Pudsey, Hornby Castle, Lancashire.
23rd Nov., 1848. **Dawson, Henry*, 30, Redcross street, and 14, St. James' road.
2nd May, 1850. *Dawson, Thomas, Rodney street.
23rd Nov., 1848. Dearden, James, F.S.A., Upton House, Poole.
6th April, 1850. De Tabley, the Lord, Tabley Hall, Cheshire.
7th May, 1851. **Dickinson, Joseph*, M.A., M.D., F.R.S., F.L.S., M.R.I.A., Bedford street.
P. 20th Dec., 1855. Dobson, William, Chronicle Office, Preston.
P. 7th Mar., 1853. *Dove, Percy M., F.S.S., F.I.B.A., Royal Insurance Office, 1, North John street, and 49, Hamilton square, Birkenhead.
4th Dec., 1856. *Driffield, Walter Wren, York buildings, Sweeting st.
23rd Nov., 1848. *Duarte, Ricardo Thomaz, 2, Royal Bank buildings.
13th Sep., 1854. *Duncan, Thomas, 18, West Derby street.
23rd Nov., 1848. *Dunlevie, Charles Thomas.

E

1st Jan., 1857. *Eaton, Fras. James, 41, Richmond terrace, Breck road, and 7, Exchange chambers.
9th Dec., 1852. Eckersley, Thomas, Wigan.
25th Sep., 1854. *Edmondson, Henry, 4, Stafford street.

P. 23rd Nov. 1848. *Egerton, Sir Philip de Malpas Grey, Bart.*, M.P., F.R.S., F.G.S., Oulton Park, Tarporley.
6th April, 1850. *Ellesmere, the Earl of*, Worsley Hall, Manchester, and Bridgewater House, London.
3rd March, 1852. *Ellis, William, 28, Kensington.
6th Dec., 1855. *Estill, Edward, 9, Orange court, Castle street.
23rd Nov., 1848. *Evans, Edward, 52A, Hanover street.
15th Sept., 1854. *Evans, H. Sugden, F.C.S., 52A, Hanover street.
4th Dec., 1856. **Evans, Robert*, Eldon grove, Rock Ferry.
8th Nov., 1849. *Evans, Thomas Bickerton, 52A, Hanover street.
23rd Nov., 1848. *Ewart, Joseph Christopher, M.P., 64, Pall Mall, London, and New Brighton.
6th May, 1852. *Ewart, William*, M.P., 6, Cambridge square, Hyde Park, London.
7th Feb., 1850. Eyton, Peter Ellis, Town Hall, Flint.

F

23rd Nov., 1848. Feilden, John, Mollington Hall, Chester.
11th Sept., 1854. Ferguson, William, F.L.S., F.G.S., F.R.G.S., 31, Torrington square, London.
23rd Nov., 1848. *Finlay, William, Collegiate Institution.
23rd Nov., 1848. *Fisher, William M., Ph.D., F.R.A.S., Upper Parliament street.
6th Dec., 1849. *Fleming, Thomas, 22, Sandon street, and 58, Castle street
5th Dec., 1850. *Forster, Wilson, New Ferry Terrace, Rock Ferry, and 36, Dale street.
23rd Sept., 1854. *Forwood, T. B., 33, North John street.
7th May, 1857. *Frackleton, Rev. S. S.*, B.A., Bailieborough, Ireland.
15th Dec., 1853. Franks, Augustus Wollaston, M.A., F.S.A., British Museum, London.
6th Jan., 1853. *French, Gilbert James*, Corr Mem. S.A., Scot., Bolton.

G

14th Dec., 1848. *Gardner, Richard Cardwell, Colonial buildings, 34, Dale street, and Newsham house.
15th Dec., 1853. *Gardner, Rev. Thomas, M.A., Stanley.
31st Oct, 1854. Garner, James Pepper, Queen street, Cheapside, London.
3rd May, 1849. Garnett, Wm. Jas., M.P., Bleasdale Tower, Garstang.
23rd Nov., 1848. *Gaskell, John, Exchange court, Exchange street East.
7th Feb., 1850. *Gath, Samuel, 137, Finch street.
18th Dec., 1856. *Gerard, Henry, 52, Upper Canning street.
P. 20th Nov., 1856. *Gibson, A. Craig, Lower Bebbington, Birkenhead.
7th March, 1850. *Gill, Robert, 1, Chapel street, and Much Woolton.
9th Dec., 1852. *Graves, Samuel Robert, 13, Redcross street.
7th Feb., 1850. *Gray, John, 16, St. Clement's terrace, Windsor, and 25, Strand street.
21st Sept., 1854. Gray, Rev. R. H., M.A., Kirkby, Prescot.
14th Dec., 1848. Gray, Thomas, Unity Insurance Office, London.
6th Feb., 1851. Gray, William, M.P., Wheatfield, Bolton.

P. 20th Dec., 1855. *Grazebrook, George, F.S.A., 40, Canning street.
7th Feb., 1850. *Green, Robert Molyneux, 14, Rupert lane, Everton.
16th Sep., 1854. *Green, Thomas, 34, Chapel street.
23rd Nov., 1848. Greenall, Rev. Richard, M.A., Incumbent of Stretton, R.D., Stretton, Warrington.
23rd Sep., 1854. Greene, John Stock Turner, Bedford, Leigh, Manchester.
31st Aug., 1854. Grenside, Rev. William Bent, M.A., Melling Vicarage, Lancaster.
19th Mar., 1857. *Grimmer, W. Henry, 6, Castle street.
8th Nov., 1849. *Guyton, Joseph, 163, Falkner terrace, Upper Parliament street.

H

20th Sep., 1854. Hadwen, Joseph, Fairfield, near Manchester.
4th Dec., 1856. Hains, Rev. Philip F. J. Bird, The Parsonage, Hoylake.
21st May, 1857. *Hall, Charlton R., 40, Everton terrace.
Mayor La., 1852-53. Hall, John, Lancaster.
2nd May, 1850. *Hall, William, Seaforth.
8th Dec., 1851. *Hammond, William John.
23rd Nov., 1848. Hampton, Rev. H., M.A., 3, Lowther Cottages, Holloway, London.
30th Dec., 1854. *Hardman, J. W., B.A., South Hill place.
P. 6th Mar., 1856. Hardwick, Charles, Preston.
P. 8th Nov., 1849. Harland, John, F.S.A., Guardian Office, Manchester.
5th May, 1853. Harrison, William, Rock Mount, St. John's, Isle of Man.
12th Jan., 1854. *Harrison, William*, F.G.S., &c., Galligreaves House, Blackburn.
9th Dec., 1852. *Harrison, Henry Walter, 27, Castle street.
9th Feb., 1854. *Harrowby, the Earl of*, D.C L., F.R.S., Sandon Hall, Staffordshire, and 39, Grovesnor square, London.
10th Feb., 1853. *Hartley, Jesse, Derby road, Bootle, and Dock Yard.
10th Feb., 1853. **Hartley, John Bernard*, Bedford street South, and Dock Yard.
P. 11th Oct., 1854. *Hartnup, J., F.R.A.S., Observatory, Vice-President.
23rd Nov., 1848. Hawkins, Edward, F.R.S., V.P.S.A., F.L.S., British Museum, London.
22nd Sep., 1854. *Hawthorne, Nathaniel, U.S. Consulate.
3rd May, 1849. *Hay, John, 2, Cable street, and Parkfield, Cottage, Birkenhead, Cheshire.
21st May, 1857. *Haywood, Francis, 7, Exchange Buildings, and Edge lane.
27th Sep., 1854. *Healey, Samuel R., 48, Castle street, and Westbank, Woolton.
23rd Nov., 1848. *Heath, Edward, Orange court, Castle street, and St. Domingo grove, Everton.
24th Oct., 1854. Heginbottom, George, Albert terrace, Ashton-under-Lyne.
11th May, 1854. Henderson, Ebenezer, LL.D., Greenbank, St Helens.
8th May, 1856. *Henderson, William, 41, Church street.
8th June, 1854. *Herd, John, Brunswick street.

23rd Nov., 1848. *Herdman, William Gawin, West Villa, St. Domingo vale, Everton.
23rd Nov., 1848. *Heywood, James*, F.R.S., F.S.A., F.G.S., Headlands, Prestwich, Manchester.
23rd Nov., 1848. *Heywood, Sir Benjamin, Bart.*, F.R.S., F.S.S., Claremont, Manchester.
P. 23rd Nov., 1848. *Heywood, Thomas*, F.S.A., Hope end, Ledbury, Herefordshire.
H. Sher. Lanc. 1855-6. *Heywood, John P., Brunswick street, and Norris green, West Derby.
3rd April, 1856. Hibbert, Joseph, Brookbank, Hyde, Cheshire.
P. 4th Jan., 1849. Hibbert, Thomas Dorning, Middle Temple, London.
P. 23rd Nov., 1848. *Higgin, Edward, 6, Sweeting street, & Blomfield House Westbourne terrace north, Paddington, London.
6th Dec., 1849. *Higgin, Thomas, Tower chambers.
12th Sep., 1854. Higgins, Rev. H. H., M.A., F.C.P.S., Asylum, Rainhill.
P. 23rd Nov., 1848. Hill, Rev. John Wilbraham, M.A., Waverton, Cheshire.
21st Sep., 1854. Hill, Samuel, 11, Lower Castle street.
26th April, 1855. Hinde, Rev. Edmund, M.A.
P. 8th Dec., 1851. Hinde, John Hodgson, 9, Saville Row, Newcastle-on-Tyne, and Acton house, Felton, Northumberland.
11th May, 1854. *Hindley, Edward, 34, Exchange street East.
18th Sept., 1854. *Hindley, Rev. Hugh Johnson, S.C.L., St. George's, Everton.
23rd Sept., 1854. *Hindmarsh, Fred.*, F.G.S., F.R.G.S., Bucklersbury, London.
16th Sept,, 1854. *Hodson, Thomas L., 39, Islington.
18th Dec., 1856. *Holden, Thomas*, Summerfield, Bolton.
24th Sept., 1854. *Holt, William D., 23, Edge Hill.
26th Sept., 1854. *Hore, Edmund Joseph, 6, George's Dock Gates.
21st May, 1857. *Hornblower, Lewis, Clarendon buildings, South John street.
20th Sept., 1855. *Horner, Francis, 33, Everton road.
7th May, 1857. *Horner, W., 34, South Castle street, Eldon House, Oxton.
23rd Nov., 1848. *Horsfall, Thomas Berry, M.P., Mill bank, West Derby.
14th April, 1853. **Houghton, Richard H., Jun.*, Sandheys, Waterloo.
4th Dec., 1856. *Howell, Edward, Church street.
P. 8th Nov., 1849. *Howson, Rev. John Saul, M.A., Principal of the Collegiate Institution, Vice-President.
Mayor La., 1849-50. Howitt, Thomas, Lancaster.
27th Sept., 1854. *Hubback, Joseph, 27, Lower Castle street & Aigburth.
14th Sept., 1854. *Hughes, Joseph, 2, Upper Duke street, and 9, Brownlow hill.
16th Sept., 1854. *Hughes, J.B., 77, Mill street.
6th April, 1854. Hughes, Thomas, 4, Paradise row, Chester.
8th Feb., 1852. Hulton, William Adams, Hurst Grange, Preston.
Mayor C., 1851-2. Humberston, Phillip Stapleton, Chester.
P. 23rd Nov. 1848. *Hume, Rev. Abraham, D.C.L., LL.D., F.S.A., Corr. Mem. S.A. Scot., 24, Clarence street, Everton, Hon. Secretary.
21st May, 1857. Hume, Hamilton, Cooma, Yass, New South Wales.
9th Feb., 1854. *Hunt, Alfred W., B.A., 31, Oxford street.
9th Dec., 1852. *Hutchison, Robert, Tower buildings, and Canning street.

I

9th Oct., 1854. Ingham, Rev. Thomas Barker, M.A., Rainhill.

J

1st April, 1852. *Jacob, John Gibborn, 56, Church street.
23rd Nov., 1848. Jacson, Charles R., Barton Lodge, Preston.
21st May, 1857. *Jeffery, James Redcliffe, 43, Church street, and 11, Lodge lane.
23rd Nov., 1854. *Jeffery, William R., 8, Montpelier terrace, Upper Parliament street.
18th Sep., 1854. *Johnson, Henry, Walton.
23rd Nov., 1848. *Johnson, John H., 7, Church street.
3rd April, 1856. *Jones, Venerable John, M.A., Archdeacon of Liverpool, Waterloo.
11th Dec., 1856. Jones, W. Hope, Hooton, Cheshire.
23rd Nov., 1848. *Jones, Alfred, 17, Goree piazzas.
23rd Sep., 1854. Jones, Edward, Wednesbury.
3rd May, 1849. *Jones, Morris Charles, 75, Shaw street.
6th Dec., 1849. *Jones, Roger Lyon, 1, Great George square.
15th Sep., 1854. Jones, Thomas, B.A., Chetham Library, Manchester.
18th Dec., 1856. *Juncker, Philip, Monckton Lodge, Anfield, Walton.

K

23rd Nov., 1848. *Kendal, Thomas, Green lane, Wavertree.
P. 3rd May, 1849. Kendrick, James, M.D., Warrington.
11th Dec., 1856. Kershaw, James, M.P., Oaklands, Victoria park, Manchester.
21st May, 1857. *Kitchen, Joseph, Exchange court, Exchange street East.
1st Feb., 1849. *Kilpin, Thomas Johnson, 1, Arrad street, Hope street.

L

15th Dec., 1853. *Lace, William Henry, 1, Union court, Castle street, and Beaconsfield, Woolton.
P. 23rd Nov., 1848. *Lamb, David, Plumpton terrace, 57, Everton road.
14th Mar., 1852. *Lambert, David Howe, 10, Exchange chambers, Tithebarn street, and Rock Park, Rock Ferry.
Lancashire, The High Sheriff of, Vice-President, *ex-officio*. (See Towneley, Charles.)
23rd Nov., 1848. Langton, William, Manchester.
21st Sep., 1854. *Lea, James, Surveyor, Egremont, Cheshire.
6th Dec., 1849. *Ledger, Reuben, Grove house, West Derby.
1st April, 1852. Lee, Rev. Thomas Falkner, M.A., Grammar School, Lancaster.
23rd Nov., 1848. Legh, G. Cornwall, M.P., High Legh, Warrington.
25th Sep., 1855. *Lidderdale, William, 42, Canning street.
4th April, 1850. Lilford, The Lord, Oundle, Northamptonshire, and Grosvenor place, London.
23rd Nov., 1848. *Lingard, Alexander Rowsand, Eastham.

Mayor Liv., 1851-2. *Littledale, Thomas, Highfield house, and 13, Exchange buildings.
*LIVERPOOL, THE MAYOR OF, VICE-PRESIDENT, *ex-officio*. (Francis Shand, Esq.)
14th Dec., 1848. *Lloyd, John Buck, Exchange alley, Exchange street West, and Aigburth.
6th Jan., 1853. *Longton, John, Breck road, and Peter's place, Rumford street.
P 23rd Nov., 1848. *Lord, Lieut. William*, R.N., London.
23rd Nov., 1848. *Lowndes, Matthew Dobson, 7, Brunswick street, and Edge lane.
14th April, 1853. Lyon, Thomas Henry, Appleton hall, Warrington.
6th Dec., 1849. Lyon, Thomas, Appleton hall, Warrington.

M

21st Sep., 1854. *MacIlveen, Alexander, Principal of the Liverpool Institute, Sandon terrace.
P. 3rd March, 1853. *MACINTYRE, PETER, M.D., 128, Duke street.
6th Dec., 1855. *Macfie, David Johnson, 1, Bachelor street.
27th Sep., 1854. *Macfie, Robert Andrew, Ashfield Hall, Neston.
16th Sep., 1854. Mackreth, Rev. Thomas, B.D., Halton Rectory, Lancaster.
5th May, 1853. **Macrae, John Wrigley*, Edge lane, and 22, Hackin's hey.
23rd Nov., 1848. *Macrorie, David, M.D., 126, Duke street.
3rd Jan., 1849. *Manchester, the Lord Bishop of*, Sedgley Hall, Manchester.
23rd Nov., 1848. Markland, James Heywood, D.C.L., F.R.S., F.S.A., Bath.
23rd Nov., 1848. *Marsden, George, Vernon Priory, Edge Hill.
P. 5th June, 1851. MARSH, JOHN FITCHETT, Fairfield house, Warrington.
1st Jan., 1857. Marshall, W., Penwortham hall, Preston.
9th March, 1854. *Mason, William Ithell, 14, Lower Hope place.
23rd Nov., 1848. *Mather, Daniel, 70, Mount pleasant.
19th Feb., 1857. *Mather, Capt R., Finch house, West Derby.
P. 23rd Nov., 1848. *MAYER, JOSEPH, F.S.A., M.R.Asiat.S., F.E.S., F.R.S. North. Antiq. Copenhagen, Hon. Mem. SS. Antiq., Normandy, l'Ouest, the Morini; de la Société d'Emulation, Abbeville, &c., 68, Lord street, CURATOR.
7th Feb., 1850. Mayer, Samuel, Newcastle-under-Lyne.
21st May, 1857. M'Nicoll, David Hudson, M.D., Southport.
23rd Nov., 1848. *M'QUIE, PETER ROBINSON, Low Hill, and 20, Water street.
6th Dec., 1849. *M'Viccar, Duncan, Abercromby terrace, and 7, Exchange buildings.
24th May, 1855. Melling, Thomas, C.E., Rainhill.
P. 6th Dec., 1849. *Middleton, Capt. James, F.S.A., Birchfield Barracks, Islington.
P. 31st Dec., 1854. *Milner, William, 322, Upper Parliament street, and Phœnix Safe Works, Windsor.
Mayor Liv., 1848-9. *Moore, John Bramley, M.P., Hon. Mem. Archæological Association, Carioca Lodge, Aigburth, and Orange court, Castle street.

P. 8th Nov., 1849. *Moore, Rev. Thomas, M.A., 65, Oxford street, Librarian.
P. 23rd Nov., 1848. Mortimer, William Williams, City Walls, Chester.
18th Dec., 1856. Moseley, Thomas Beeby, 52, Upper Charlotte street, Fitzroy square, London.
P. 23rd Nov., 1848. *Moss, Rev. John James, M.A., Upton, Cheshire.
7th Mar., 1850. *Mott, Albert J., 21, South Castle street, and Orchard hey, Preston road, Walton.
18th Sep., 1854. *Mott, Charles Grey, 27, Church road, Higher Tranmere.
21st May, 1257. *Mozley, Charles, 125, Mount pleasant.
19th Sep., 1854. *Musker, Roger Melling, Walton.
11th Dec., 1856. Myres, John James, Bank parade, Preston.

N

H. S. Ches., 1857. *Naylor, Richard*, Hooton, Cheshire.
23rd Nov., 1848. *Neill, Hugh, F.R.A.S., Abercromby square.
2nd April, 1857. *Newenham, Rev. W. T., B.A., St. John's Parsonage, Knotty Ash.
P. 6th Dec., 1855. *Newton, John, 15, West Derby street.
23rd Nov., 1848. Nicholson, James, F.S.A., Thelwall Hall, Warrington.
25th Sept., 1854. *Nisbett, William, Church street, Egremont.
6th Dec., 1849. *North, Alfred, 33, Huskisson street.
29th Sept., 1854. *Nottingham, John, M.D., 18, Roscommon street.
13th Dec., 1854. *Nuttall, Thomas, F.L.S., Nut grove, Rainhill.

O

2nd Jan., 1851. *Oates, Captain W. C.*, Cavendish place, Bath.
4th Dec., 1856. *O'Donnell, John, M.D., 34, Rodney street.
P. 6th Dec., 1849. Ormerod, George, D.C.L., F.R.S., F.S.A., F.G.S., Sedbury Park, Chepstow.
6th Feb., 1851. Osborne, John James, Macclesfield.
3rd Jan., 1850. *Overend, James, 45, Hope street.

P

23rd Nov., 1848. *Paris, Thomas Jeremiah, 68, Lord street.
3rd Jan., 1850. *Parker, Charles Stewart, Bank chambers, Cook street.
18th Dec., 1856 Parker, Robert Townley, Cuerden Hall, Preston.
1st May, 1856. Parr, Rev. H., Vicarage, Taunton.
7th Mar., 1850. *Patten, John Wilson*, M.P., Bank Hall, Warrington.
2nd Nov., 1854. Patterson, Andrew, Principal of the Deaf and Dumb Institution, Manchester.
9th Oct., 1854. *Peacock, John, 2, Chapel street.
23rd Nov., 1848. Pedder, Edward, Ashton Park, Preston.
11th Dec., 1856 *Pedder, Henry Newsham*, Preston.
23rd Nov., 1848. Pedder, Richard, Stanley terrace, Preston.
8th Dec.. 1851. Perrin, Joseph, The Crescent, Levenshulme, Manchester.
P. 6th Jan., 1849. *Picton, James Allanson, F.S.A., 19, Clayton square, and Sandy Knowe, Wavertree.
10th Sept., 1854. *Picton, John, 65, Hunter street.

8th Dec., 1849. *Pierce, George Massey, Linacre Marsh.
3rd May, 1849. Pierpoint, Benjamin, Warrington.
23rd Nov., 1848. Pilkington, James, M.P., Park place, Blackburn.
10th Feb., 1853. *Platt, Robert*, Dean Water, Handforth, Manchester.
23rd Nov., 1848. *Poggi, Rev. Dominica Joseph, D.D., New Brighton College, Cheshire.
6th Dec., 1849. *Poole, John, 23, Oxford street.
29th Dec., 1854. Porter, Rev. Jas., M.A., St. Peter's College, Cambridge.
Mayor M., 1849-52. Potter, Sir John, Kt., M.P., Manchester.
1st Sept., 1854. Preston, Rev. G., M.A., Grammar School, Whalley.
12th March, 1857. *Preston, Geo. Theo. Robert, Rock House, West Derby road, and 13, Vernon street, Dale street
6th Dec., 1849. *Preston, William, 13, Vernon street, and Rock House, West Derby road.

Q

18th Dec., 1856. Quekett, Rev. W., M.A., Rectory, Warrington.

R

9th March, 1854 *Radcliffe, John, Eaton Cottage, Knotty Ash, and 4, Water street.
23rd Nov., 1848. Raines, Rev. Canon, M.A., F.S.A., Milnrow Parsonage, Rochdale.
P. 18th Sept., 1854. *Ramsay, Rev. Arthur, M.A., Hayman's Green, West Derby.
23rd Sept., 1854. *Rathbone, William, 24, Water street, and Greenbank, Wavertree.
21st Sept., 1854. *Rawlins, Charles Ed., jun., 23, Temple street, and 4, Windermere terrace, Prince's park.
15th March, 1849. Rawlinson, Robert, C.E., F.G.S., 34, Parliament street, Westminster.
13th Sept., 1854. *Raynes, James Trevelyan, 37, Old Hall street, and Rock Park, Rock Ferry.
23rd Nov., 1848. *Reay, James, Guardian Office, Commerce court, Lord street.
23rd Nov., 1848. *Reay, Thomas, 87, Church street.
29th Dec., 1854. *Rees, William, 28, West Derby street.
7th March, 1850. *Richardson, Samuel, 102, Pembroke place.
15th Nov., 1855. Roberts, Thomas, Kyffin, St. Asaph.
P. 23rd Nov., 1848. Roberts, William John, Cross Mount, Aughton.
14th Dec., 1848. *Robin, John, Chapel Walks, South Castle street, and Grove Hill, West Kirby, Cheshire.
20th Dec., 1855. Robin, Rev. P. R., M.A., Barnston, Birkenhead.
23rd Nov., 1848. *Robinson, Charles Backhouse, 12, Myrtle street, and Matilda grove, Aigburth.
8th March, 1853. Robinson, John, Westfield, Huddersfield.
11th Dec., 1856. *Robinson, Joseph, Lord street, and Tue Brook, West Derby.
P. 3rd May, 1849. Robson, John, M.D., Warrington.
3rd Jan., 1850. *Ronald, Robert Wilson, Dale street.
14th April, 1853. *Ryder, Thos. Bromfield, 2, Elliot street, Clayton square.

25th Sept., 1854. Rylands, Peter, Warrington.
P. 13th Dec., 1854. RYLANDS, THOMAS GLAZEBROOK, Warrington.

S

6th Dec., 1855. *Sandbach, W. R., Bank buildings, Cook street, and The Cottage, Aigburth.
P. 19th Sept., 1854. *Sansom, Rev. John, B.A., Buslingthorpe Rectory, near Wragby, Lincolnshire.
P. 7th Sept., 1851. *SANSOM, THOMAS, A.L.S., F.B.S.E., Local Secretary of the Botan. Soc., London, 33, Everton road.
23rd Nov., 1848. *Scholfield, Henry D., M.D., 14, Hamilton square, Birkenhead.
8th Jan., 1852. Sharp, John, The Hermitage, Lancaster.
2nd June, 1853. *Sharp, William*, 102, Piccadilly, London.
23rd Nov., 1848. Sharpe, Edmund, M.A., Coedfa, Llanwrst, N. Wales.
1st Dec., 1855. *Shawe, J. R., Arrowe Hall, Cheshire.
7th Feb., 1850. *Sherlock, Cornelius, 22, King street.
3rd May, 1849. Shute, Robert, 2, Baring Crescent, Exeter, Devon.
4th Dec., 1856. Shuttleworth, Sir J. P. Kay, Bart., Gawthrop Hall, Burnley.
23rd Nov., 1848. *Simpson, Rev. Samuel, M.A.*, St. Thomas' Parsonage, Douglas, Isle of Man.
23rd Nov., 1848. Skaife, Thos., Vanburgh House, Blackheath, London.
21st Sept., 1854. Skelton, William, Bruch Hall, Warrington.
2nd May, 1850. **Smith, James*, Brunswick dock, and Seaforth.
30th Dec., 1854. *Smith, John Peter George, Borough Bank, Water street, and Spring Bank, Breck road.
16th Sept., 1854. Smith, John, Macclesfield.
6th Jan., 1853. *Smith, William Penn, 26, Hanover street.
23rd Nov., 1848. *Snowball, J. G., 16, Castle street, and 11, Upper Canning street.
6th Nov., 1856. Sodor and Man, the Lord Bishop of, (The Hon. and Right Rev. Dr. Powis,) Bishop's court, Isle of Man.
2nd Nov., 1854. Stainer, William, 35, Chorlton road, Hulme, Manchester.
3rd Jan., 1856. *Staniforth, Rev. Thomas*, Storrs, Windermere.
13th Dec., 1855. *Steiner, F.*, Hyndburn, Accrington.
1st Jan., 1856. *Steains, James, 56, Upper Kensington, and 35, North John street.
21st May, 1857. *Stewart, A. C., Union buildings, 16, North John street.
30th Dec., 1854. *Stewart, James Gordon, 3, West Derby street.
23rd Nov., 1848. *Stewart, Rev. John, M.A., Sandown Park, West Derby.
6th June, 1850. *Stock, John, 7, Exchange buildings, and Westdale, Wavertree.
20th Nov., 1856. *Stroud, William Lawrence, 1, Upper Woodlands, Clifton Park, Birkenhead.
8th Nov., 1849. *Stuart, William, 1, Rumford place, and Springfield House, Knotty Ash.
5th June, 1851. Stubs, Joseph, Park place, Frodsham.
25th Sept., 1854. *Sumners, Henry, Colquitt street.
21st Sept., 1854. *Surr, John, Everton Valley.
23rd Nov., 1848. *Sutton, Hugh Gaskell, Exchange court, Exchange street East, and Woodend, Aigburth.

4th March, 1852. *Sykes, James, Colonial buildings, 34, Dale street, and Breck House, Poulton-le-fylde.

T

P. 23rd Nov., 1848. **Thom, Rev. David*, D.D., Ph. D., 28, Erskine street,
P. 8th Dec., 1851. Thornber, Rev. William, B.A., Blackpool.
13th Sept., 1854. *Thornely, Samuel, 22, Clarence street.
8th Dec., 1851. *Tinne, John A., F.R.G.S., 13, Bank chambers, Cook street, and Briarley, Aigburth.
11th Dec., 1856. Threlfall, Richard, Avenham terrace, Preston.
Mayor Li. 1854-55. *Tobin, James Aspinall, South John street.
14th Dec., 1848. Tobin, Sir Thomas, F.S.A., Ballincollig, Cork.
22nd Sept., 1854. Topham, Thomas, Castle street, Chester.
8th Jan., 1852. *Torr, John, 15, Exchange buildings, and Eastham.
H.S, Lanc., 1857. Towneley Charles, Towneley hall, Burnley.
P. 2nd April, 1857. *Towson, John Thomas, 47, Upper Parliament street, and Sailors' Home.
5th Dec., 1850. *Tucker, Robert, 11, North view, Edge Hill.
P. 23rd Nov., 1848. *Tudor, Richard A., M.R.C.S., Church view, Bootle.
14th April, 1853. *Turner, Charles, 4, Lancelot's hey, and Dingle Head.
27th Sept., 1854. *Turner, John Hayward, 52, Rodney street.
6th Dec., 1849. Turner, Edward, High street, Newcastle, Staffordshire.
20th Dec., 1855. *Turner, William, Jun., Stourton, Cheshire.

U

8th Mar., 1854. *Underwood, Rev. Charles W., M.A., Vice-Principal Collegiate Institution.

V

23rd Nov., 1848. **Varty, Thomas*, Walpole villa, Fairfield, and Lime street.
14th April, 1853. *Vose, James, M.D., 5, Gambier terrace, Hope street.

W

Myr. C. 1838-39, 48-49. *Walker, Sir Edward Samuel*, Berry Hill, Mansfield, Notts.
11th Dec., 1856 Walmsley, Thomas, Preston.
6th Mar., 1851 Warburton, Rowland Eyles Egerton, Arley hall, Cheshire.
17th May, 1855 *Warburton, Thomas, Exchange News Room.
21st May, 1857 Ward, John Angus, Hooton lodge, Cheshire.
6th June, 1850 *Waterhouse, Sebastian, 13, Percy street.
26th Sep., 1854 *Watling, J. W. H., Wavertree.
5th Feb., 1857 *Watt, Richard*, Speke hall.
2nd May, 1850 *Way, Albert*, M.A., F.S.A., Wonham Manor, Reigate, Surrey.
1st Feb., 1849. *Webster, George, 6, York buildings, Sweeting street, and 7, Northumberland terrace, Everton.
3rd Jan., 1856 Welton, Thos. A., F.S.S., 147, Fenchurch street, London.

1st Feb., 1849 **Whitehead, James Wright*, Orange court, Castle street, and 15, Duke street, Edge Hill.
2nd June, 1853 *Whitley, George, 5, Clayton square, and Spital.
9th Oct, 1854 Whitley, Rev. John, M.A., Newton Rectory, Warrington.
6th June, 1850 Whitley, Rev. William, B.A., Catsclough, Winsford, Cheshire.
P. 30th Nov., 1854. Wilkinson, Thomas Turner, F.R.A.S., Corr. Mem. Lit. and Phil. Soc., Manch., Burnley.
14th Sep., 1854 *Willink, Rev. Arthur, M.A., St. Paul's, Tranmere.
8th Jan., 1852 *Willoughby, Edward G., Marine Cottage, Tranmere.
6th Dec., 1855 Wilson, G. F., F.R.S., Belmont, Vauxhall, London.
23rd Nov, 1848 *Winstanley, Samuel T., Church street.
23rd Nov., 1848 Wood, Venerable Isaac, M.A., Archdeacon of Chester, Newton, near Middlewich.
23rd Nov., 1848 Wood, Isaac Moreton, M.A., Newton, near Middlewich.
9th Feb., 1854 Wood, Samuel, F.S.A., The Abbey, Shrewsbury.
10th Feb., 1853 *Wood, Thomas, B.A., Blue Coat Hospital.
7th May, 1851 **Woodhouse, John George*, 47, Henry street.
1st Jan., 1857 Woods, Rees, 3, Vivian terrace, Greenheys, Manchester.
3rd Oct., 1854 Woolnough, Rev. Edward, Northenden Rectory, Stockport.
30th Dec., 1854. Worthy, George Smith, Bristol.
5th May, 1853. *Wylie, Alexander Henry, Union court, Castle street.

HONORARY MEMBERS.

6th Feb., 1851. Akerman, John Yonge, Sec. S.A.; Hon. M.R.S.L.; F.S.A., Newcastle; F.R.S. of Northern Antiquaries; Corr. Mem. SS. Antiq. Scot. France, Russia, Switzerland, Rome; Hon. Mem. Roy. Acad., Stockholm; Somerset House, London.
27th Sep., 1854. Babington, Charles Cardale, M.A., F.R.S., F.L.S., Sec. C.P.S., St John's College, Cambridge.
P. 13th Nov., 1851. Bell, William, Ph.D., 15, Woburn buildings, Euston square, London.
6th Feb., 1851. Blaauw, William Henry, M.A., F.S.A., Beechland, Uckfield, Sussex.
6th Feb., 1851. Boileau, Sir John P., Bart., F.R.S., F.S.A., Kettering-ham Hall, Wyndham, Norfolk, and 20, Upper Brook street, Grosvenor square, London.
27th Sep., 1854. Brewster, Sir David, K.H., D.C.L., LL.D., F.R.SS.L. and E., Hon. M.R.I.A., St. Andrews, N.B., and Allerby, Roxburghshire.
6th Feb., 1851. Charlton, Edward, M.D., F.S.A. Newc., 7, Eldon square, Newcastle-on-Tyne.
P. 1st Feb., 1855. Clarke, Joseph, F.S.A., Saffron Walden, Essex.
8th Jan., 1852. De Perthes, J. Boucher, de Crevecoeur, Chevalier des ordres de Malte et de Legion d'honneur, membre des diverses Sociétés Savantes, Abbeville.
6th Feb., 1851. Duncan, Philip B., D.C.L., Oxford.
27th Sept., 1854. Gray, John Edward, Ph.D., F.R.S., F.L.S., V.P.Z.S., V.P. Entom. Soc., &c., British Museum, London.
P. 27th Sept, 1854. Latham, R Gordon, M.D., F.R.S., 22, Upper Southwick street, London, and Greenford, Middlesex.

6th Dec., 1849. Londesborough, The Lord, K.C.H., F.R.S., F.S.A., President of the Numismatic Society, Grimston, Tadcaster, and 8, Carleton House terrace, London.

9th Dec., 1852. MacAdam, Robert, 18, College square, Belfast.

27th Sept., 1854. Murchison, Sir Roderick Impey, G.C.St.S., M.A., D.C.L., F.R.S., V.P.L.S., F.G.S., V.P.R.Geogr.S., Hon. M.R.I.A., Director-General of the Geological Survey of Great Britain and Ireland; Trust. Brit. Mus.; Hon. Mem. Acadd. St. Petersburgh, Berlin, Copenhagen; Corr. Mem. Inst. France, &c., 16, Belgrave square, London.

27th Sept., 1854. Owen, Richard, M.D., LL.D., F.R.S., F.L.S., F.G.S., British Museum, London.

P. 7th May, 1851. Pidgeon, Henry Clarke, 3, Westbourne Villas, Harrow road, London.

27th Sept., 1854. Phillips, John, M.A., F.R.S., F.G.S., Magdalen bridge, Oxford.

27th Sept., 1854. Rosse, the Earl of, K.P., D.C.L., F.R.S., F.S.A., F.R.A.S., F.G.S., Birr Castle, Parsonstown, Ireland.

27th Sept., 1854. Sabine, Major-General Edward, R.A., D.C.L., Treas. and V.P. R.S., F.R.A.S., 13, Ashley place, Victoria street, London, and Woolwich.

27th Sept., 1854. Sedgwick, Rev. Adam, M.A., F.R.S., F.G.S., F.R.A.S., Hon. M.R.I.A., Woodwardian Professor, Trinity College, Cambridge.

6th Feb., 1851. Smith, Charles Roach, F.S.A., Member of the Roy. Soc. North. Antiq. Copenhagen; Hon. Mem. SS. Antiq. France, Normandy, Scotland, Spain, Newcastle, the Morini, Abbeville, Picardy, Wiesbaden, Luxemburg, Treves, Touraine, &c., Temple place, Strood, Kent.

6th Feb., 1851. Turnbull, William, B.D.D., F.S.A. Scot., 3, Stone buildings, Lincoln's Inn, London.

6th Feb., 1851. Turner, Dawson, F.R.S., F.S.A., F.L.S., Hon. M.R.I.A., M.R.S.L., Acadd. Caes. Nat. Cur. et Reg. Sc. Holm. Socius, Lee Cottage, Old Brompton, and Athenæum Club, London.

27th Sept., 1854. Whewell, Rev. William, D.D., F.R.S., F.G.S., F.R.A.S., Hon. M.R.I.A., Master of Trinity College, Cambridge.

6th Feb., 1851. Williams, Rev. John, M.A., Llanymowddwy, Dinas Mowddwy.

6th Feb., 1851. Willis, Rev. Robert, M.A., F.R.S., Jacksonian Professor, Cambridge, and 23, York terrace, Regent's Park, London.

P. 27th Sept., 1854. Wright, Thomas, M.A., F.S.A., Hon. M.R.S.L., Member of the Institute of France; of the Roy. Soc. Northern Antiqs. Copenhagen; Corresp. Mem. Soc. Antiq. Normandy; of Soc. Antiqs. Scotland; and of Comms. appointed by French Gov. for publication of Histor. Mon., &c.; 14, Sydney street, Brompton, London.

TRANSACTIONS.

ON THE LANGUAGE OF LANCASHIRE, UNDER THE ROMANS.

By R. G. Latham, M.A., M.D., F.R.S.

(Read 8th January, 1857.)

In the present paper, advantage is taken of the local character of the Historic Society of Lancashire and Cheshire, to make the name of the county serve as a special text for a general subject. What applies to Lancashire applies to any county in Roman England.

The doctrine is as follows—that in Lancashire particularly, and in England in general, the predominant language for the first five centuries of our era was not Latin but British.

The writer is so far from laying this down as a novelty, that he is by no means certain, that it may not be almost a truism. He is by no means certain, that there is a single one of those to whom he addresses himself, who may now hold, or even have held, the opposite opinion. He is fully aware that excellent authorities have maintained both sides of the question. He is only doubtful as to the extent to which one doctrine may preponderate over the other.

If the question were to be settled by an appeal to the history of the more influential opinions concerning it, we should find that, in a reference to the earliest and the latest of our recent investigators, Dr. Prichard would maintain one side of the question, Mr. Wright another. The paper of the latter, having been printed in the Transactions of the Society, is only alluded to. The opinion of Dr. Prichard is conveyed in the following extract—"The use of languages really cognate must be allowed to furnish a proof, or at least a strong presumption, of kindred race. Exceptions may indeed, under very peculiar circumstances, occur to the inference

founded on this ground. For example, the French language is likely to be the permanent idiom of the negro people of St. Domingo, though the latter are principally of African descent. Slaves imported from various districts in Africa, having no common idiom, have adopted that of their masters. But conquest, or even captivity, under different circumstances, has scarcely ever exterminated the native idiom of any people, unless after many ages of subjection; and even then, vestiges have perhaps always remained of its existence. In Britain, the native idiom was nowhere superseded by the Roman, though the island was held in subjection upwards of three centuries. In Spain and in Gaul, several centuries of Latin domination, and fifteen under German and other modern dynasties, have proved insufficient entirely to obliterate the ancient dialects, which were spoken by the native people before the Roman conquest. Even the Gypsies, who have wandered in small companies over Europe for some ages, still preserve their original language in a form that can be everywhere recognised."*

Upon the whole, I think that the current opinion is in favour of the language of Roman Britain having been Latin; at any rate I am sure that, before I went very closely into the subject, my own views were, at least, in that direction. "What the present language of England would have been, had the Norman conquest never taken place, the analogy of Holland, Denmark, and many other countries enables us to determine. It would have been as it is at present. What it would have been had the *Saxon* conquest never taken place, is a question wherein there is far more speculation. Of France, of Italy, of Wallachia, and of the Spanish Peninsula, the analogies all point the same way. They indicate that the original Celtic would have been superseded by the Latin of the Conquerors, and consequently that our language, in its later stages, would have been neither British nor Gaelic, but Roman. Upon these analogies, however, we may refine. Italy was from the beginning, Roman; the Spanish Peninsula was invaded full early; no ocean divided Gaul from Rome; and the war against the ancestors of the Wallachians was a war of extermination."†

In these preliminary remarks we find a sufficient reason for going specially into the question; not, however, as discoverers of any new truth, or as those who would correct some general error, but rather, in a

* Eastern Origin of the Celtic Languages, p. 8. † English Language, first edition, p. 68.

judicial frame of mind, and with the intention of asking, first, how far the actual evidence is (either way) conclusive; next, which way (supposing it to be inconclusive) the presumption lies; and third, what follows in the way of inference from each of the opposing views.

What is the testimony of the classical writers, *subsequent to the reduction of Britain*, to the effect that the Romans, when they conquered a Province, established their language? I know of none. I know of none, indeed, *anterior* to the Britannic conquest. I insert, however, the limitation, because in case such exist, it is necessary to remember that they would not be conclusive. The practice may have changed in the interval.

Is there anything approaching such a statement? There is a passage in Seneca to the effect "that where the Roman conquers there he settles."

But he conquered Britain. Therefore he established his language. Add to this that where he established his own language, there the native tongue became obliterated. Therefore the British died off.

If so, the Angles—when they effected *their* conquest—must have displaced, by their own English, a Latin rather than a British, form of speech.

But is this the legitimate inference from the passage in question? No. On the contrary, it is a conclusion by no means warranted by the premises. Nevertheless, as far as external testimony is concerned, there are no better premises to be found.

But there is another element in our reasoning. In four large districts at least,—in the Spanish Peninsula, in France, in the Grisons, and in the Danubian Principalities—the present language is a derivative from the Latin, which was, undoubtedly and undeniably, introduced by the Roman conquest. From such clear and known instances, the reasoning to the obscure and unknown is a legitimate analogy, and the inference is that Britain was what Gallia, Rhœtia, Hispania, and Dacia were.

In this we have a second reason for the fact that there are many who, with Arnold, hold, that except in the particular case of Greece, the Roman world, in general, at the date of the break-up of the Empire, was Latin in respect to its language. At any rate, Britannia is reasonably supposed to be in the same category with Dacia—a country conquered later.

On the other hand, however, there are the following considerations.

I. In the first place the Angle conquest was gradual; so gradual as

to give us an insight into the character of the population that was conquered. Was this (in language) Latin? There is no evidence of its having been so. But is there evidence of its having been British? A little. How much, will be considered in the sequel.

II. In the next place the Angle conquest was (and is) incomplete; inasmuch as certain remains of the earlier and non-Angle population still exist. Are these Latin? Decidedly not; but on the contrary British,—witness the present Britons of Wales, and the all but British Cornishmen, who are now British in blood, and until the last century were, more or less, British in language as well.

But this is not all. There was a third district which was slow to become Angle, viz.: part of the mountain district of Cumberland and Westmoreland. What was this before it was Angle? Not Roman but British.

Again—there was a time when Monmouthshire, with (no doubt) some portion of the adjoining counties, was in the same category in respect to its *non*-Angle character with Wales. What was it in respect to language? Not Roman but British.

Again—*mutatis mutandis.* Devonshire was to Cornwall as Monmouth to Wales. Was it Roman? No—but, on the contrary, British.

Now say, for the sake of argument, that Cornwall, Wales, and Cumberland were never Roman at all, and consequently, that they prove nothing in the question as to the introduction of the Latin language. But can we say, for even the sake of argument, that Devon and Monmouth were never Roman? Was not, on the contrary, Devon at least, exceedingly Roman, as is shewn by the importance of Isca Danmoniorum, or Exeter.

Or, say that the present population of Wales is no representative of the ancient occupants of that part of Britain, but, on the contrary, descended from certain immigrants from the more eastern and less mountainous parts of England. I do not hold this doctrine. Admitting it, however, for the sake of argument—whence came the present Welsh, if it came not from a part of England where British, rather than Latin, was spoken? There must have been British somewhere; and probably British to the exclusion of Latin.

The story of St. Guthlac of Croyland is well-known. It runs to the effect that being disturbed, one night, by a horrid howling, he was seriously

alarmed, thinking that the howlers might be *Britons*. Upon looking-out, however, he discovered that they were only devils—whereby he was comforted, the Briton being the worse of the two. Now the later we make the apochryphal story, the more it tells in favor of there having been Britons in Lincolnshire, long after the Angle conquest. Yet Lincolnshire (except so far as it was Dane,) must have been one of the most Angle portions of England. In France, Spain, Portugal, the Grisons, Wallachia or Moldavia, such devils as those of St. Guthlac would have been Romans.

As the argument, then, stands at present, we have traces of the British as opposed to the Angle, but no traces of the Latin in similar opposition.

Let us now look at the *analogies*, viz: Spain, (including Portugal,) France, Switzerland, and the Danubian Principalities; in all of which we have had an aboriginal population and a Roman conquest, in all of which, too, we have had a third conquest subsequent to that by Rome—even as in Britain we have had the triple series of (A) native Britains, (B) Roman conquerors, (C) Angles.

What do we find? In all but Switzerland, remains of the original tongue; in all, without exception, remains of the language of the population that conquered the Romans; in all, without exception, something Roman.

In Britain we find nothing Roman; but, on the contrary, only the original tongue and the language of the third population.

I submit that this is strong *primâ facie* evidence in favour of the Latin having never been the general language of Britain. If it were so, the area of the Angle conquest must have exactly coincided with the area of the Latin language. Is this probable? I admit that it is anything but highly improbable. The same practicable character of the English parts of Britain (as opposed to the Welsh, Cornish, and Cumbrian) which made the conquest of a certain portion of the Island easy to the Romans as against the Britons, may have made it easy for the Angles as against the Romans; and *vice versa*, the impracticable character of Wales, Cornwall, and Cumberland, that protected the Britons against their first invaders, may have done the same for them against the second. If so, the two areas of foreign conquest would coincide. I by no means undervalue this argument.

It is almost unnecessary to say that the exact conditions under which Britain was reduced were not those of any other Roman Province.

In respect to Spain, the Roman occupancy was *early*, having begun long before that of Northern and Central Gaul, having begun during the Punic wars, and having become sufficiently settled by the time of Augustus to command the attention of Strabo on the strength of the civilization it had developed. In Spain, then, there was priority in point of time to account for any extraordinary amount of Roman influences.

Gaul, with the exception of the earlier acquisitions in the Narbonensis, was the conquest of one of the most thorough-going of conquerors. The number of enemies that he, Cæsar, had slaughtered has been put at 1,000,000. Without knowing the grounds of this calculation, we may safely say that his campaigns were eminently of a destructive character.

The conquerors of the Breuni, Genauni, and similar occupants of those parts of Switzerland where the Rumonsch Language (of Latin origin) is now spoken, were men of similar energy. Neither Drusus nor Tiberias spared an enemy who opposed. Both were men who would "make a solitude and call it peace."

That Trajan's conquest of Dacia was of a similar radical and thorough-going character is nearly certain.

Now, the evidence that the conquests of the remaining provinces were like those of the provinces just noted, is by no means strong. At the same time, it must be admitted that the analogy established by four such countries as Gaul, Spain, Switzerland, and Moldo-Wallachia is cogent. What was the extent to which Africa, Pannonia, Illyricum, Thrace, and the Mœsias were Romanized? Of Asia, I say nothing. It was sufficiently Greek to have been in the same category with Greece itself, and in Greece itself we know that no attempts were made upon the language.

Africa was Latin in its literature; and, at a later period, pre-eminently Latin in its Christianity. But the evidence that the vernacular language was Latin is null, and the presumptions unfavourable. The Berber tongue of the present native tribes of the whole district between Egypt and the Atlantic is certainly of high antiquity; it being a well-known fact, that in it, several of the names in the geography of classical Africa are significant. Now this is spread over the country indifferently. Neither does it show

any notable signs of Latin intermixture. Neither is there trace, or shadow of trace, of any form of speech of Latin origin throughout the whole of Tunis, Tripoli, Algiers or Morocco.

In Pannonia and Illyricum, the same absence of any language of Latin origin is manifest. Pannonia and Illyricum have had more than an average amount of subsequent conquerors and occupants—Goths, Huns, Avars, Bulgarians, Sclavonians, Hungarians, Germans. That the Slovak, however, in the north, and Dalmatian forms of the Servian in the south, represent the native languages is generally admitted—now, if not long ago. These, then, have survived. Why not, then, the Latin if it ever took root?

In respect to Thrace, it is just possible that it may have been, in its towns at least, sufficiently Greek to have been in the same category with Greece proper. I say that this is just possible. In reality, however, it was more likely to be contrasted with Greece than to be classed with it. One thing, however, is certain, viz.:—that the country district round Constantinople was never a district in which Latin was of vernacular. Had it been so, the fact could hardly have been unnoticed, or without influence on the unequivocally Greek Metropolis of the Eastern Empire.

If the doctrine that Thrace may have been sufficiently Greek to forbid the introduction of the Latin be doubtful, the notion that the Mœsias were so is untenable Yet the Latin never seems to have been vernacular in either of them. Had it been so, it would probably have held its ground, especially in the impracticable mountains and forests of Upper Mœsia or the modern Servia. Yet where is there a trace of it? Of all the Roman Provinces, Servia or Upper Mœsia seems to be the one wherein the evidence of a displacement of the native, and a development of a Latin form of speech, is at its *minimum*, and the instance of Servia is the one upon which the analogous case of Britain best rests.

The insufficiency of the current reasons in favour of the modern Servian being of recent introduction, have been considered by me elsewhere.

Now comes the notice of a text which always commands the attention of the Ethnological philologue, when he is engaged upon the Angle period of our island's history. It refers to the middle of the eighth century, the era of the Venerable Bede, from whose writings it is taken. I give it *in extenso*. It runs "Hæc in presenti, juxta numerum librorum quibus lex divina scripta est, quinque gentium linguis, unam eandemque summæ

veritatis et veræ sublimitatis scientiam scrutatur et confitetur; Anglorum, videlicet, Brittonum, Scottorum, Pictorum et Latinorum quoæ meditatione scripturarum, cæteris omnibus est facta communis.*

That the Latin here is the Latin of Ecclesiastical, rather than Imperial Rome, the Latin of the Scriptures rather than classical writers, the Latin of a written book rather than a Lingua Rustica, is implied by the context.

Should this, however, be doubted, the following passage, which makes the languages of Britain only four, is conclusive—"Omnes nationes et provincias Britanniæ, quæ in *quatuor* linguas, id est Brittonum, Pictorum, Scottorum et Anglorum divisæ sunt, in ditione accepit."†

It is the first of these two statements of Beda's that the following extract from Wintoun is founded on.

Cronykil, I. xiii. 39.

Of Langagis in Bretayne sere
I fynd that sum tym fyf thare were:
Of Brettys fyrst, and Inglis syne,
Peycht, and Scot, and syne Latyne.
Bot, of the Peychtis, is ferly,
That ar wndon sá hályly,
That nowthir remanande ar Language,
Næ' succession of Lynage:
Swá of thare antiqwytè
Is lyk bot fabyl for to be.

But the Latin of the scriptures may have been the Latin of common life as well. Scarcely. The change from the written to the spoken language was too great for this. What the latter would have been we can infer. It would have been something like the following "Pro Deo armur et pro Xristian poblo et nostro commun salvament d'ist di en avant, in quant Deus savir et poder me dunat, si salvarai eo cist meon fradre Karlo, et in ajudha et in cadhuna cosa, si com om per dreit son fradra salvar dist, in o quid il me altresi fazet: et ab Ludher nul plaid nunquam prindrai uni, meon vol, cist meon fradre Karle in damno sit."

This is the oath of the Emperors Karl and Ludwig, sons of Charlemagne, as it was sworn by the former in A.D. 842. It is later in date than the time of Beda by about a century; being in the Lingua Rustica of France. Nevertheless, it is a fair specimen of the difference between the spoken languages of the countries that had once been Roman Provinces, and the

* *Hist. Eccl. l.* 1, *c.* 1. † *Eccl. Hist.* iii, 6.

written Latin. Indeed, it was not Latin, but Romance; and, in like manner, any vernacular form of speech, used in Britain but of Roman origin, would have been Romance also.

The conclusion which the present notice suggests is—

That the testimony of authors tells neither way.

That the presumptions in favour of the Latin which are raised by the cases of Gaul, Spain, Rhœtia, and Dacia, are anything but conclusive.

That the inferences from the earliest as well as the latest data as to the condition of *English* Britain, the inferences from the Angle conquest, and the inferences from the present language of Wales, are decidedly against the Latin.

I may, perhaps, be allowed to conclude by a reference to a paper already alluded to, as having been laid before the present Society, by Mr. Wright. This is to the effect, that the Latin reigned paramount not only in England, but in Wales also, under the Roman dominion; the present Welsh being of recent introduction from Armorica.

That the population was heterogeneous is certain, the Roman Legionaries being, to a certain extent, other than Roman. It is also certain that there was, within the island, at an early period, no inconsiderable amount of Teutonic blood. It is certain, too, that the name *Briton* had different applications at different times.

If so, the difference between Mr. Wright and myself, in respect to the homogeneousness or heterogeneousness of the Britannic population, is only a matter of degree.

In respect to the particular fact, as to whether the British or Latin language was the vernacular form of speech, we differ more decidedly. That the British was unwritten and uncultivated is true; so that the exclusive use of the Latin for inscriptions is only what we expect. The negative fact that no British name has been found inscribed, I by no means undervalue.

The *preponderance* however, of a Non-British population, and the use of the Latin as the *vernacular* language, are doctrines, which the few undoubted facts of our early history impugn rather than verify.

The main difficulty which Mr. Wright's hypothesis meets—and it *does* meet it—lies in the fact of the similarity between the Welsh and Armorican being too great for anything but a comparatively recent separation to

account for. Nevertheless, even this portion of what may be called the Armorican hypothesis, is by no means incompatible with the doctrine of the present paper. The Celtic of Armorica may as easily have displaced the *older* Celtic of Britain (from which, by hypothesis, it notably differed) as it is supposed to have displaced the Latin.

I do not imagine this to have been the case; indeed I can see reasons against it, arising out of the application of Mr. Wright's own line of criticism.

I think it by no means unlikely that the argument which gives us the annihilation of the British of the British Isles, may also give us that of the Gallic of Gaul. Why should Armorica have been more Celtic than Wales? Yet, if it were not so, whence came the Armorican of Wales? I throw out these objections for the sake of stimulating criticism, rather than with the view of settling a by no means easy question.

ON THE IMPORTANCE OF TESTING CHRONOMETERS BEFORE THEY ARE USED AT SEA, WITH EXAMPLES TO SHOW HOW THEIR MOST COMMON FAULTS MAY BE DETECTED.

By John Hartnup, F.R.A.S.

(Read 15th January, 1857.)

It is well known by those who have had much experience with chronometers, that some of the most serious defects to which they are liable cannot possibly be detected by an inspection of the works, however carefully they may be examined by the most skilful chronometer maker. It is also well known that the mariner, unaided, has no means whatever of efficiently testing the quality of a chronometer. From the first introduction of marine timekeepers, as an aid to navigation, it has been the practice to test all those employed in the British Navy at the Royal Observatory at Greenwich, previous to their being placed in the hands of the officers appointed to use them at sea. But the merchant captain has never been able to avail himself of this privilege; and until the Corporation of Liverpool made the necessary provision in this port, a few years ago, he had no authority to appeal to for information as to the quality of a chronometer, notwithstanding that this instrument is used, almost exclusively, for so important an object as that of finding the longitude of a ship at sea.

The subject is so novel, that some explanation appears necessary, to show the merchant captain how the chronometer can be tested for him, and what degree of confidence he may place in the tests which are applied, in an establishment provided with the necessary instruments and apparatus for making the experiments, and in which there is a proper guarantee for the records being faithfully kept for his inspection. In giving this explanation, examples will be introduced to which we shall frequently refer, in order to explain the nature of the most common faults which are found to exist in the chronometers now in use in the merchant service. These examples have been taken from the records of the Liverpool Observatory. In the following (Nos. 1 to 4), the daily rate is given in each, for twenty days in succession; and we trust that this period, short as it is, will be seen to be

sufficiently long to prove that the faults in Nos. 1, 2 and 3 rendered them unfit for sea use at that time; but that confidence might have been safely placed in No. 4.

EXAMPLES.

No. 1. New and Gaining on its Rate.		No. 2. Compensation not properly effected.		No. 3. Rate irregular in the same Temp.		No. 4. Rate steady and Compensation good	
Daily Rate. Gaining.	Temp.	Daily Rate. Losing.	Temp.	Daily Rate. Gaining.	Temp.	Daily Rate. Gaining.	Temp.
s.	°	s.	°	s.	°	s.	°
0.1	60	2.2	52	3.2	67	0.3	59
0.3	61	2.0	52	5.9	64	0.3	60
0.4	62	2.3	54	5.8	64	0.4	60
0.4	63	2.4	55	5.7	64	0.2	63
0.5	61	2.7	56	2.3	66	0.2	63
0.6	60	2.8	56	5.0	63	0.2	59
0.9	60	11.6	83	5.1	62	0.4	80
1.1	61	11.5	83	4.7	66	0.4	84
1.5	58	11.8	84	3.8	69	0.4	84
1.4	56	11.9	84	3.6	63	0.3	65
1.4	55	2.6	55	0.6	69	0.7	65
1.5	54	3.0	55	0.8	69	0.7	63
1.6	55	2.7	54	0.2	68	0.6	62
1.7	53	2.8	55	0.3	68	0.8	60
2.0	53	3.1	56	1.0	69	0.8	59
2.0	54	3.2	57	2.2	64	0.7	60
1.9	52	3.2	57	2.1	63	0.7	58
2.0	53	2.9	56	2.6	63	0.6	59
2.1	55	3.0	56	5.4	62	0.5	58
2.4	57	2 2	53	6.1	62	0.6	58

In the choice of a chronometer, the object of the mariner should be to select one which keeps a steady rate in those temperatures to which he will be most frequently exposed at sea; and the uniformity of the daily rate of No. 4, in temperatures ranging from 58° to 84,° would doubtless lead him to select this for a warm climate. Without such records to refer to, he has nothing to guide him in his choice.

The four chronometers here selected, appeared equally good to the eye, although three of them were quite unfit to take to sea at that time. Yet, a few months after the above results were obtained, No. 1 did keep, and Nos. 2 and 3 were made to keep rates nearly as steady as No. 4.

The way in which these improvements were brought about, we will endeavour to explain, beginning with No. 1. When new, chronometers have a tendency to gain on their rates, for periods varying from two or three, to six or eight months. This tendency to gain, appears to be caused by a change which gradually takes place in a new balance spring; the spring must be made hard to insure good performance, and the harder the spring the longer the chronometer appears to gain. Old chronometers, with new balance springs, gain as much as new chronometers. The effect of this tendency to gain is shown in No. 1. On the first day of the twenty, the daily rate was one-tenth of a second; on the last day, it was two seconds and four tenths. In this case, the chronometer continued to gain for upwards of four months, and the rate increased from one-tenth of a second to upwards of ten seconds a day. Five months subsequent to the period at which these results were obtained, the rate became steady, and the chronometer might then have been taken to sea, with every probability of good performance. A chronometer having this fault, might increase its gaining rate ten or fifteen seconds a day, in a voyage of three or four months; and the mariner not knowing the cause, would become dissatisfied, and possibly part with it at a great sacrifice, just at the time when good performance might be expected from it. It is quite a common thing for captains to bring their new chronometers to the Observatory *after*, instead of *before*, the first voyage, for the purpose of having them tested; in consequence of bad performance during the voyage. In such cases, we frequently find the fault to be this tendency to gain, from being new, and notwithstanding the great increase of rate which has taken place, it often happens that the tendency to gain has then nearly or quite ceased; and without anything being done to the chronometers, they are generally found to give satisfaction the next voyage.

We will now proceed to an explanation of the cause of the irregularity in the daily rate exhibited in No. 2. This is a case of imperfect compensation for change of temperature. The chronometer loses nine seconds a day more in 84° than it does in 55°. The shipmaster in possession of a timekeeper with this imperfection might be subjected to the most serious inconvenience, and possibly, after giving it a trial for a voyage or two, he would come to the conclusion that it was worthless, and part with it for a fault which could be removed for a few shillings. A chronometer maker who understands his business, on being shown the

tabulated results here given, would instantly know how to make the necessary alteration; the weights on the compensation balance, in this case, should be shifted a little towards the ends of the curved arms. In No. 4, it will be seen that no sensible alteration of rate took place on changing the temperature from below 60° to above 80°, and there is nothing whatever indicated in the performance of No. 2, to lead us to suppose that it might not be made to perform equally well. The defect is one of very common occurrence, as may be seen by our records; hundreds of similar cases have been detected during the past ten years at the Liverpool Observatory. It sometimes happens that chronometers are sold with both the faults shown in Nos. 1 and 2, and the increase of gaining rate during the first voyage is on some occasions so nearly equal to the loss from defective compensation, that the ship's longitude by chronometer is found to be sensibly accurate. On the next voyage, the tendency to gain having ceased, defective compensation acts alone, and the result is great disappointment. We have known captains in such cases to say that the performance of the chronometer was satisfactory during the first voyage, but that it had never gone well since.

In No. 3 the irregularities cannot be attributed to either of the faults exhibited in Nos. 1 and 2. The change of rate is not so gradual, continuous, and in the same direction as in No. 1; nor is it dependent on temperature, as in No. 2. The irregularity is quite as decided as in either of the preceding cases, but the cause is not so apparent; precisely similar irregularities are found to arise from a great variety of causes. The oil may be glutinous, or it may have escaped from one or more of the jewelled holes; a jewel may be loose or defective; the escapement may be imperfectly adjusted, or some other imperfection may exist, which the skilful workman will probably detect on taking the chronometer to pieces. Another and similar trial will prove whether he has detected and removed the fault. Sometimes the chronometer may pass through the hands of the most experienced chronometer maker several times, before he detects the fault, for it requires, on some occasions, no ordinary amount of skill; but the test, subsequent to the last examination by the maker, will show if the desired improvement is effected.

Supposing, therefore, that the mariner has access to an establishment in which experiments, similar to those exhibited in the preceding examples,

are made for him, he can himself, with the greatest ease, detect those faults which chronometers are so frequently found to have, and which are to him of so much importance. He has only to look down the column of daily rates, and to see that the temperature, shown in the side column, has been changed 20° or 30°. The difference between the results given from day to day will indicate at once if the chronometer has a steady rate. He must, however, bear in mind, that absolute perfection is impossible, variations of a few tenths of a second will take place. Chronometers which will bear a change of temperature of 20° or 30°, and in which the extreme difference between any two days for thirty or forty days in succession, does not amount to more than one second, or one second and a half, may be safely taken as first-rate marine timekeepers. If it were possible to make chronometers perfect in all other respects, the defect of the ordinary compensation balance would alone produce a change in the daily rate, as large as that above named. This may be seen in the following examples, in which we have selected three chronometers which were found to have nearly the same rates in 50° and 80°. By examining the rates about half way intermediate between 50° and 80°, it will be seen that each of them gained from one second to one second and a half more, than they did in either the high or low temperatures. The daily rates here given are all *gaining*, and the averages have been taken instead of the rate for each day, as in the preceding examples, the errors to be detected being very small.

EXAMPLES.

No. 5. Mean Daily Rate. Gaining.	Temp.	No. 6. Mean Daily Rate. Gaining.	Temp.	No. 7. Mean Daily Rate. Gaining.	Temp.
s.	°	s.	°	s.	°
0.2	50	0.2	50	0.0	50
1.9	65	1.9	65	1.7	65
0.8	80	0.3	80	0.8	80

These rates were obtained from chronometers having the ordinary compensation balance. This balance is in use in the merchant service almost without exception. It does not perfectly compensate for the change of elasticity in the balance spring. With it the chronometer can be made to go the same in any *two* temperatures, but it cannot be made to go precisely the same in any *three* temperatures. All chronometers with this description of balance go faster in some particular temperature than they do in any other temperature, and the chronometer maker has the power of fixing

this maximum gaining rate, either in a high, low, or medium temperature, at pleasure; by so adjusting the weights, on the compensation balance, as to give the chronometer the same rate in two temperatures at equal distances from that in which the maximum gaining rate is required. In example No. 6, the maximum gaining rate is fixed at 65°, as near as possible, and the loss at 50° is one second and seven tenths, and at 80° one second and six tenths. The temperature at which the maximum gaining rate is fixed, is a matter of the highest importance in chronometers with this description of balance; because we find, that the further this point is departed from, the greater will be the variation of rate for a given change of temperature. At the distance of 15°, as we have seen, the change of rate is about one second and a half, but at 30° distance it is found to be much more than twice that amount. Ships at sea are for the most part exposed to temperatures ranging from 50° to 80°, and captains should therefore take care that their chronometers have as nearly as possible the same rate in these two temperatures.* Suppose a chronometer with the ordinary compensation balance to go *mean time* in 50° and 80°, then, as we have seen, it may be expected to gain about one second and a half in 65°; in 90° it would probably lose about two seconds, and in 40° it would probably lose from two to four seconds a day. In temperatures below 40° there is less certainty; the thickening of the oil and the consequent decrease in the arc of vibration, appear to be the cause of this. By winding up or letting down the main spring, and thereby increasing or diminishing its power, the maker can cause the chronometer balance to vibrate in a large or a small arc; and there is a certain length of the balance spring, at which the daily rate of the chronometer is found to be the same, whether the arc of vibration be large or small. Now it is very probable that some makers so adjust the balance spring as to cause the chronometer to have the same rate in the large as in the small arcs; and that others so adjust it as to make the chronometer gain more or less in the small arcs. In the former case, the loss from additional friction, caused by the thickening of the oil, together with that from the defect of the balance, might be excessive; while, in the latter case, it would be more or less compensated for by the gain consequent on the diminished arc of vibration. Mariners who have chronometers compensated for high tem-

* This circumstance is either not known by chronometer makers, or it is not sufficiently attended to: the records of the Liverpool Observatory clearly prove this.

peratures, should, if possible, when in high latitudes, keep their time-keepers in a room with the temperature not much lower than 50°; as it is by no means unusual for us to meet with chronometers having rates nearly as steady as can be desired between 60° and 85°, but which will, nevertheless, in temperatures between 30° and 40°, change their rates ten, and even twenty seconds a day. Chronometers intended for constant use in low temperatures, should be compensated exclusively for low temperatures; for with the balance in common use, they cannot be made to go with any degree of satisfaction, through so long a range of temperature as 60° or 80°.

There cannot be a doubt as to the practicability of removing this defect in the ordinary balance, but two things above all others are necessary for its accomplishment. Our means of testing must be such as to satisfy the makers that we can detect at once and without delay any improvement which they may make; and mariners, who are generally the customers of the makers, must make themselves so far acquainted with the defects of chronometers as to show that they can understand and appreciate improvements. The Corporation of Liverpool made the necessary provision for testing chronometers in this port some years ago, and arrangements are now being made in London, under the direction of the Board of Trade, for testing chronometers in a manner precisely similar to that which we have practised for the past ten years. The testing apparatus for London has been made in this town under our immediate superintendence; and an officer has, by permission of the Corporation, been taught our method, in order that the same plan may be adopted in London. No chronometer maker, therefore, either in Liverpool or London, need now be in doubt for more than a few days, as to the efficiency of any improvement which he may attempt in the compensation balance of a chronometer; for the result of our experience is, that extreme cold is not necessary for the detection of this fault, and the higher temperatures are always under our control. Temperatures below 40° are not favourable for this experiment, unless the fluidity of the oil can be depended on, as a large change in the arc of vibration may render the result uncertain. In testing chronometers for this particular fault, it is however, desirable to elevate the temperature to 100° and upwards, and the oil by being subjected to very high temperatures, even for a few days, may become deteriorated. In the method which we are about to describe, it must therefore be understood that it is only practised at the special request of the maker, who supposes that he has

effected some improvement in the balance, and who intends to clean the chronometer again after the experiment. Unless this special request be made, 85° or 90° is the extreme heat to which we expose chronometers. This temperature is not greater than chronometers must occasionally be exposed to at sea, and we have found from long experience that no injury whatever is done to the oil by such exposure.

The following is the method of testing for improvements in the compensation balance, which we have always found both expeditious and successful. The maker is first requested to adjust the chronometer with the supposed improvement, to go the same in 50° and 80°. The experiment should be repeated several times to insure this being successfully done, and when it is found that changes from 80° to 50°, and from 50° to 80° can be made without altering the rate more than a few tenths of a second, the temperature is increased from 80° to 90°, from 90° to 100°, and from 100° to 110° in succession, and the change through these temperatures repeated two or three times. In chronometers with the ordinary balance the losing rate increases from 80° upwards, till at 110° it is found to amount to several seconds a day; but if the chronometer which is being tested cannot be made to lose more in 90°, 100°, and 110° than it does in 50° and 80°, the balance will be found to be, for all practical purposes, sensibly perfect.* Several chronometers which stood this test at the Liverpool Observatory, were afterwards tested by Professor Bond at the Cambridge Observatory in North America, during a very severe winter. The result was such as to show that when the oil did not become hard or glutinous, the rates of the chronometers remained as steady at several degrees below zero of Fahrenheit as they did in the higher temperatures, scarcely altering more than one second a day in a range of temperature exceeding 100 degrees; but that, if the oil became glutinous or hard, the chronometers, even with this balance, would lose considerably in temperatures below 30°.

Until chronometers used in the merchant service are more generally subjected to a test previous to their being purchased than they now are,

* We do not here allude to auxiliary compensations, the adjustments of which depend on the skill of the maker in each individual chronometer. If ever the balance now in use be superseded, it will be by an improvement of such a nature that if the balance compensates at all, the defect which we have attempted to describe will be removed without any additional trouble to the *springer*.

the makers will for the most part confine their improvements to the chronometers which are sent to the Royal Observatory at Greenwich for trial previous to purchase by the Admiralty. A chronometer sold to the Admiralty gives the maker a name, and this name has till recently been the only guarantee afforded to the merchant captain; hence we often find him in possession of a chronometer, the rate of which is quite as irregular as either of those exhibited in the first three examples.

The makers will exert themselves to the utmost, to supply the astronomer with a good chronometer, because they know that he can test its qualities, and appreciate its value; and that he will not be unreasonable in his expectations. Not that the astronomer is often perfectly satisfied with the performance of his instruments, but he generally makes himself too well acquainted with the failings to which they are liable, to allow himself to be deceived by such imperfections. Now, this is precisely what we wish to see in the mariner. He is called upon almost daily to exercise his judgment as to the degree of confidence which he is justified in placing in his instruments; and a knowledge of the imperfections to which they are liable is the only thing that can guide him to correct conclusions in these, to him, very important matters.

Since the preceding has been in type, I have received a letter from the Chairman of a Committee of Merchants, recently formed in New York, for the purpose of establishing an Observatory in that city, in all respects similar to the Liverpool Observatory, with the exception of the large and elaborately mounted equatorial. Agreeably to the request of the Chairman of this Committee, I have obtained estimates of the probable expense of a Transit Instrument, Sidereal and Solar Clocks, Testing Apparatus for Chronometers, Osler's Anemometer and Rain Gauge, &c., &c., which will be forwarded to New York as soon as possible. We may expect, therefore,

in a short time, to have in full operation a first-rate Nautical Observatory, on the other side of the Atlantic.

The present intention is to confine the business of this Observatory to such objects of practical utility as are more immediately connected with navigation. One or more time balls will be dropped daily, and especial attention will be paid to the rating and testing of Chronometers, for which it is intended to make ample accommodation. Now that the importance of the subject is beginning to be more clearly understood, other sea ports will doubtless soon follow the examples set by Liverpool, London and New York; and there will be no excuse for Chronometers being sent to sea without previously having them properly tested.

ON THE BATTLE OF BRUNANBURH;—AND THE PROBABLE LOCALITY OF THE CONFLICT.

By T. T. Wilkinson, F.R.A.S., &c., &c.

Read 4th December, 1856.

Section I. The Battle.

The Battle of Brunanburh forms one of the most important events in the history of the Anglo-Saxons. The preparations for the conflict exhausted the naval and military resources of the Danish colonists, and its issue consolidated the power and raised the Saxon name to the highest dignity among the states of Europe. Of upwards of 100,000 combatants engaged on both sides, probably the greatest portion perished on the field or during the pursuit; for of the confederated forces led by Anlaf, only a shattered remnant survived to tell the tale of their defeat. At the period of which we speak, Athelstan swayed the sceptre of the Anglo-Saxons with an authority unknown to his predecessors. The Scottish, the Cumbrian, and the Welsh Kings acknowledged his superiority, and those of Northumbria were barely able to maintain their independence. Sihtric, the son of Ingwar, and grandson of Ragnar Lodbrog, was then the reigning King of Northumbria, and Athelstan, during the first few years of his reign, found it necessary to conciliate his friendship by giving him his sister in marriage. The Danish king appears to have inherited much of the ferocity and most of the ability of his ancestors; for the Saxon Annals speak of him as the murderer of his own brother, and in Irish history he is chiefly noted for his piratical depredations. He, however, formally embraced Christianity on the occasion of his marriage, but soon after repenting of his change of religion, he put away his wife and resumed his idolatry. Athelstan determined to revenge this insult offered to his sister, and prepared to invade Northumbria; but Sihtric died before the preparations were completed. Notwithstanding this, Athelstan soon drove Anlaf and Godfrid, the sons and successors of Sihtric into exile, and annexed these counties to his own dominions.

During the struggle for possession, Ealdred was driven from his petty sovereignty of Bebbanburh; the castle at York, which held out for Anlaf

was demolished; and on a subsequent occasion Scotland was ravaged to the borders of the Highlands, while Athelstan's fleet spread terror and dismay to the extremities of Caithness. Anlaf fled to Dublin, where he was acknowledged as chief of the Anglo-Danes established on the east coasts of Ireland; and Godfrid, after being given up to Athelstan by Constantine, king of Scotland, escaped from court and betook himself to a life of piracy on the seas. "But Athelstan," as Sharon Turner remarks, "was not permitted to enjoy his triumph unmolested. The Northern chieftains saw that the progress of Athelstan's power was advancing to their complete subjection. The states on the Baltic were still full of fierce and active adventurers, who had to seek fame and fortune in other regions; and descendants of Ragnar Lodbrog yet existed, both enterprising and popular."* Constantine was preparing for retaliation, and Anlaf was planning to regain his power in Northumbria. "In Wales, the princes humbled by Athelstan, were ready to co-operate for the diminution of his strength. The Anglo-Danes, in Northumbria and East Anglia, beheld with displeasure the preponderance of the Saxon sovereign, and the petty state of Cumbria had no choice but to follow the impulse of the potent neighbours that surrounded it. All these powers confederated against Athelstan, and the united mass of their hostilities was increased by fleets of warriors from Norway and the Baltic. . . . . England had never been assailed before with a confederacy of so much power; formed with so much skill; and consisting of so many parts. . . . . Athelstan prepared to meet the storm with firmness and energy; and, to multiply his own means of defence, he circulated promises of high reward to every warrior who should join his standard. Thorolf and Egils, two of those navigating Vikingr whose weapons were ready for any enterprise, heard the tidings as they sailed by Saxony and Flanders. They came in the autumn with three hundred companions, to proffer their services to Athelstan, who gladly received them; and Rollo assisted him from Normandy."†

"Anlaf commenced the warfare by entering the Humber with a fleet of 615 ships. The governors whom Athelstan had left in Northumbria, together with their forces, were soon overpowered. Gudrekr fell, and Alfgeirr fled to his sovereign with the tidings."‡ This sudden and formid-

* Turner's *Anglo-Saxons*, vol. ii. p. 175. † *Ibid*, page 177. ‡ *Ibid*, page 178.

able invasion found Athelstan comparatively unprepared for effective resistance. He consequently had recourse to negotiations and fictitious offers of money in order to buy off his assailants, and to gain time, till all his own forces could be assembled. When all his preparations were completed, Athelstan closed the intercourse with Anlaf by informing him that Northumbria could not be ceded; but that he might withdraw from the country unmolested upon restoring the plunder he had secured, and acknowledging himself a subject of the Saxon king. Anlaf rejected the terms with disdain, and on a council of war being held it was decided that the Welsh and Danish leaders, Adalis and Hryngr, should make a night attack upon the advanced portion of Athelstan's army under the command of Alfgeirr and Thorold. "At night Adalis and Hryngr embodied their forces and marched on the Saxon camp. Werstan, Bishop [of Sherborne, who had replaced Athelstan in this portion of the camp] was the victim of the surprise. But Thorolf and Alfgeirr, who commanded in the district, roused their warriors and supported the attack. Adalis assaulted the division of Alfgeirr, and Hryngr directed himself to the allied vikingr. Vanquished by the impetuosity of his assailant, Alfgeirr fled from the field, and eventually the country. Adalis, flushed with his victory, turned on the others. Thorolf directed his colleague Egils to meet him; he exhorted his troops to stand close, and if overpowered to retreat to the wood. Egils obeyed, though with a force far inferior. The battle became warm. Thorolf fought with all the fury of valour, which was the pride of the day; he threw his shield behind him, and grasping his huge weapon with both hands, he prostrated his enemies with an irresistible strength. He forced his way at last to the standard of his adversary; he reached and killed him. His success animated his followers, and Adalis, mourning the death of Hryngr, gave way, and the combat discontinued."*

Great commanders, however, seldom choose to harass their forces by ineffectual skirmishing. They prefer to trust the whole to the chances of a single battle rather than incur the risk of ultimate defeat in a series of minor engagements. During the conflict just described, Anlaf was in hopes of deciding the contest by cutting off his antagonist by a night attack. He had ascertained the position of Athelstan's tent, and would no doubt have accomplished his object, if his design had not been penetrated by one of

* Turner's *Anglo-Saxons*, vol. ii. pp. 180, 181.

his former followers. The result, although favorable to Athelstan, was sufficient to convince him of the valor and skill of the minstrel commander, and he proceeded to arrange his forces for a decisive struggle. Anlaf did the same. A night of rest, some say two, preceded the awful conflict. Athelstan formed his array of battle. In the front he placed his bravest troops, with Egils at their head. He let Thorolf head his own band, with an addition of Anglo-Saxons, to oppose the irregular Irish, who always flew from point to point; no where steady, yet often injuring the unguarded. The warriors of Mercia and London, who were conducted by the valiant Turketul, the chancellor of the kingdom, he directed to oppose themselves to the national force of Constantine. He chose his own West-Saxons to endure the struggle with Anlaf his competitor. Anlaf observing his dispositions, in part imitated them. He obeyed the impulse of his hopes and his courage, and placed himself against Athelstan. One of his wings stretched to the wood against the battalia of Thorolf; it was very numerous, and consisted mostly of the disorderly Irish.

Brunanburh was the scene of action; and Thorolf began the battle he loved; he rushed forward to the wood, hoping to turn the enemy's flank; his courage was too impetuous and indiscriminate; his eagerness for the fray impelled him beyond his companions. Both were pressing fiercely and blindly onwards when Adalis darted from his ambush in the wood and destroyed Thorolf and his foremost friends. Egils heard the outcries of alarm; he looked to that quarter, and saw the banner of Thorolf retreating. Satisfied from this circumstance that Thorolf was not with it, he flew to the spot, encouraged his party, and renewed the battle. Adalis fell in the struggle.

At this crisis, while the conflict was raging with all the obstinacy of determined patriotism and courageous ambition; when missile weapons had been mutually abandoned; when foot was planted against foot, shield forced against shield, and manual vigour was exerted with every energy of destruction; when chiefs and vassals were perishing in the all-levelling confusion of war, and the numbers cut down were fiercely supplied with new crowds of warriors hastening to become victims; the chancellor Turketul made an attack which influenced the fortune of the day. He selected from the combatants some citizens of London, on whose veteran valour he could rely; to these he added the men of Worcestershire, and their leader, who

is called the magnanimous Singin. He formed these chosen troops into a firm and compact body, and placing his vast muscular figure at their head, he chose a peculiar quarter of attack, and rushed impetuously on his foe.

The hostile ranks fell before him. He pierced the circle of the Picts and the Orkneymen, and heedless of the wood of arrows and spears which fastened in his armour, he even penetrated to the Cumbrians and the Scots. He beheld Constantine, the king of the Grampian Hills, and he pressed forward to assail him. Constantine was too brave to decline his daring adversary. The assault fell first upon his son, who was unhorsed, and with renovated fury, the battle then began to rage. Every heart beat vehemently; every arm was impatient to rescue or to take the prince. The Scots with noble loyalty, precipitated themselves on the Saxons to preserve their leader. Turketul would not forego the expected prize. Such, however, was the fury of his assailants; so many weapons surrounded the Saxon chancellor, that his life began to be endangered, and he repented of his daring. He was nearly oppressed; the prince was just released, when Singin, with a desperate blow, terminated the contested life. New courage rushed into the bosoms of the Saxons on this event. Grief and panic as suddenly overwhelmed their enemies. The Scots in consternation withdrew, and Turketul triumphed in his hard earned victory.

Athelstan and his brother Edmund, during these events, were engaged with Anlaf. In the hottest of the conflict, the sword of Athelstan broke at the handle, while his enemies were pressing fiercely upon him. He was speedily supplied with another, and the conflict continued to be balanced. After the battle had long raged, Egils and Turketul, pursuing the retreating Scots, charged suddenly upon Anlaf's rear. It was then that his determined bands began to be shaken; slaughter thinned their ranks; many fled, and the assailants cried out victory! Athelstan exhorted his men to profit by the auspicious moment. He commanded his banner to be carried into the midst of the enemy. He made a deep impression on their front, and a general ruin followed. The soldiers of Anlaf fled on every side, and the death of pursuit filled the plain with their bodies.

Thus terminated this dangerous and important conflict. Its successful issue raised Athelstan to a most venerated dignity in the eyes of Europe. The kings of the continent sought his friendship, and England began to assume a majestic port among the nations of the West. Among the Anglo-

Saxons, the victory excited such rejoicings, that not only did their poets aspire to commemorate it, but their songs were so popular that the following is inserted in the Saxon Chronicle as the best memorial or record of the event."*

Here Athelstan, king;
Of Earls, the Lord;
To heroes the bracelet-giver,
And his brother also,
Edmund Atheling,
Elder of ancient race,
They won a lasting glory,
With the edges of their swords,
By slaughter in battle,
Near Brunanburh.
The followers of Edward
Their board-walls clove.
With the wrecks of hammers
They hewed the noble banners.
To them it was natural
From their ancestry,
That they in the field
Against every foe,
Their lands should defend,
Their hoards and homes.
Pursuing, they destroyed
The Scottish people
And the ship-fleet.
The dead fell;—
The field resounded;—
The warrior sweat.
Since the sun was up
In morning hour—
Gigantic creature—
Glad above the earth:—
God's candle bright—
The eternal Lord's—
Till the noble creature
Set in the western main.
There lay soldiers many,
With darts struck down.
Northern men there were
Over their shields shot.
And Scotland's boast,
A Scythian race
The mighty seed of Mars.
With chosen troops
Throughout the day
The fierce West-Saxons
Pressed on the hated bands:—
Hewed down the fugitives—
Scattered the rear—
With strong mill-sharpened blades.
The Mercians too,
Did not refuse,
The hard-hand play,
With those that Anlaf brought:
Over the raging sea,
In the bosom of his ships,
Who sought this land
For deadly fight.
Five kings lay
On that battle field:
In bloom of youth
Pierced through with swords.
So also seven
Of Anlaf's Earls;
And of ships' crews
Unnumbered crowds.
The little band
Of hardy Scots
Was there dispersed.
There was made flee
The Northmen's chieftain.
By need constrained
He sought the prow,
Urged to the noisy deep,
And so his life preserved.
So too Constantine,
The valiant chief,
In hasty flight
His country sought.
The hoary warrior
Cared not to boast
Among his kindred
Of the blending swords.
Here was his kindred band
Of friends o'erthrown:—
On the folk-stead
In battle slain.
And his son he left
On the slaughter-field,
Mangled with wounds
And young in fight.
The fair-haired youth;—
He would not boast
Of the slaughtering strife;
Nor would the old deceiver.
No more could Anlaf,
With the remnants of their armies
Boast and say,
That they on the field
Of stern command,
Better workmen were;
In the conflict of banners;—
In the clash of spears:—
In the meeting of heroes;
In the rustling of weapons,
When they on the field
Of slaughter played
With the followers of Edward.
The Northmen sailed
In their nailed barks.
A dreary remnant
On the raging ocean:
O'er the deep water
Dublin to seek,

* Turner's *Anglo-Saxons*, vol. ii. pp. 181—185.

And Ireland's shores
Disgraced in mind.
So then the brothers,
King and Atheling,
Their country sought:—
West-Saxon land:—
In fight triumphant.
They left behind them
The corse to devour;
The sallow kite—
The swarthy raven
With horned beak—
And the hoarse vulture—
With the eagle swift
To consume the prey.
The greedy war-hawk too,
And that grey beast
The wolf which haunts the wood.

No slaughter yet
Was greater made,
In this our land
Of people slain;
Before this time
By edge of sword:
As books declare
Of writers old:—
Since hither first
From eastern shores,
Angle and Saxon came,
Over the broad sea
And Britain sought.
These mighty smiths of war
O'ercame the Welsh;
Most valiant Earls were they
And gained the land.*

In addition to the preceding, it may be observed that the praises of Athelstan formed the theme of many an ancient poem. Henry of Huntingdon characterises some of these as mere bombast, but William of Malmsbury, although mostly agreeing with him in opinion, has preserved a portion of two which appear to claim a higher designation. In the first of these, his childhood and accession are related in laudatory, but not extravagant terms; and in the other, his victory over Anlaf is celebrated in a strain not unbecoming so noble an achievement. Some little reserve may be necessary when it is stated that Athelstan's forces mustered

"A hundred thousand strong;"—

nor can it be doubted that the poet has exercised his licence freely when he avers that—

"Anlaf, only, out of all the crew
Escaped the meed of death so justly due."†

The prayer of Athelstan before the battle, is perhaps nothing better than an invention of our old historians: it however exists both in the original Saxon, and in a Latin version, which is probably contemporary with the prose narratives of some of the earlier annalists. Sharon Turner gives a few of the opening sentences only in his valuable history, from which I have so largely quoted, but through the kindness of Dr. Hume I am enabled to present a version of the whole, accompanied by another poetical fragment relating to the crowning effort of the Saxon King.

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* Turner's *Anglo-Saxons*, vol. iii. pp. 274—276. Ingram's *Saxon Chronicle*, pp. 141—145. Giles's *Saxon Chronicle*, pp. 375—377.

† William of Malmsbury, p. 137. (Bohn.)

SONG, ON ATHELSTAN'S VICTORY OVER THE DANES AT BRUNANBURH.

[From MS. Cotton. Nero A. II., fol. 8, v°. Written in a bold Saxon hand, contemporary or nearly so with the event. (A. D. 938.) The song, or fragment, appears to have been taken down from recitation, by an ignorant scribe, and is hopelessly corrupt.] Printed by Mr. Thomas Wright, in the *Reliquiæ Antiquæ*, vol. ii. p. 179, (1845.)

Carta dirige gressus
per maris et navium
tellarisque spatum
ad reges palatum.

Regem primum salute
reginem et clitanum
clarus quoque commitis
militis armieros.

Quorum regem cum Æthelstanum
ista per fecta Saxonia
vivit rex Æthelstanum
per fecta gloriosa.

Ille Sictric defuntum
armatum in prelia
Saxonum exercitum
per lotum Bryttanium.

Constantinus rex Scottorum
et velum Bryttannium
salvando regis Saxonum
fideles servitia.

Dixit rex Æthelstanus
per Petri preconia
sint sani sint longe
in Salvatoris gratia.

PRAYER BEFORE THE BATTLE.

(FROM THE SAME MS.)

Domine Deus omnipotens, rex regum et dominus dominantium, in cujus manu omnis victoria consistit, et omne bellum conteritur, concede mihi ut tua manus cor meum corroboret, ut in virtute tua in manibus viribusque meis bene pugnare viriliterque agere valeam, ut inimici mei in conspectu meo cadent et corruant, sicut corruit Golias ante faciem pueri tui David, et sicut populus Pharaonis coram Moysi in Mare Rubro, et sicut Philistim coram populo Israel ceciderunt, et Amalech coram Moysi et Chananei coram Jesu corruerunt, sic cadant inimici mei sub pedibus meis, et per viam unam conveniant adversum me, et per septem fugiant a me, et conteret Deus arma eorum, et confringet framea eorum, et eliquisce in conspectu meo sicut cera a facie ignis, ut sciant omnes populi terre quia invocatum nomen, Domini nostri Jhesu super me, et magnificetur nomen tuum Domine, in adversariis meis Domine Deus Israel.

SECTION II.—THE LOCALITY.

Such was the Battle of Brunanburh, and such its consequences to the Danes in Lancashire. It was still called *great* at the time when Ethelward wrote his chronicle for the instruction of Matilda, and although all our historians have borne testimony to its magnitude and importance, they have invariably remained silent as to the *locality* of the conflict.

The *Saxon Chronicle* states that the battle was fought *near* Brunanburh; Ethelward calls the place Brunandune; Simeon of Durham gives Wendune as the locality; Malmsbury and Ingulf name it Brunsford, or Brunford; Florence of Worcester agrees with the *Saxon Chronicle;* Henry of Huntingdon gives Brunesburh; and Geffrei Gaimar has the variations Brunswerce, Burnewest, and Brunewerche. In the *Annales Cambriæ* it is styled "Bellum Brune," or the Battles of the Brun; and the same designation is found in the *Bruty Tywysogion*, or the Chronicle of the Princes of Wales. All these, no doubt, imply the same locality, but no distinctive place is

assigned by any of these authorities. William of Malmsbury says that the field is situated "far into England," and consequently must not necessarily be sought near the seashore, as some inquirers have recently suggested. Camden in his *Britannia* gives Brumford, near Brumridge, in Northumberland, as the place where "King Athelstan fought a pitched battle against Anlaf the Dane;" but Gibson suggests that it "must have been somewhere nearer the Humber;" although he finds a difficulty in carrying Constantine "and the little King of Cumberland so high into Yorkshire." More recently we find Bromborough in Cheshire, Banbury in Oxfordshire, Burnham and Bourne in Lincolnshire, Brunton in Northumberland, Brownedge in Lancashire, &c., suggested as probable sites; but so far as I am aware little else than unsupported conjectures are offered as reasons why we should prefer one of these localities to another, in our selection of that most entitled to credit.

Dr. Giles, and others, merely vitiate the text of the *Saxon Chronicle* by writing the name Brumby instead of Brunanburh. Ingram in his map of Saxon England places the site in Lincolnshire, near the Trent, but without assigning any sufficient reasons; nor have other writers been much more careful. Turner merely observes that "the *Villare* mentions a Brunton in Northumberland," and Gibson states, what may still be seen in maps of a century old, "that in Cheshire there is a place called Brunburh," near the shores of the Mersey. The Lincolnshire localities do not appear to possess any better claims than similarity of sound in the initial syllable, and the same may be said of Brunton, Brownedge, and others. Brinkburn, in that county, is called Brincaburh by John of Hexham in A.D. 1154, and on such slight grounds the authors of the *Beauties of England and Wales* conjecture that "this is the true situation of Brunanburh!" (Vol. xii p. 190.) Some appearances of a fortification on the hill adjoining certainly lend a colour to this presumption; and similar slight indications of an encampment near Brumridge may have led Camden to decide in favour of this locality; but in the present state of our knowledge of these and kindred subjects we are entitled to demand something more than what these authors have produced, before we can admit that their conjectures are worthy of more than a passing consideration. The pages of a gazetteer, or the names on a map, may assist in detecting orthographical variations and coincidences; but they do not enable us to

prove, or pronounce, an identity, unless when supported by other and more positive evidence.

I therefore now propose to substitute the name of BURNLEY IN LANCASHIRE *for any or all of these, and I hope in the course of this essay to render it extremely probable that the* BATTLE OF BRUNANBURH *was fought in its vicinity.*

The town of Burnley must have been considered of some importance even in Saxon times, for there is every reason for believing that Paulinus himself preached the gospel in the neighbourhood, and baptized his converts in the River Brun. A Saxon Cross still exists in Godly Lane, near St. Peter's Church,* of a similar character and workmanship to those at Whalley and Dewsbury, which are generally admitted to attest the presence of the "Apostle of the North"; whilst *Bishop Leap* and *Bishop House* in the immediate vicinity of the cross, may be adduced as additional evidences of the archbishop's visit. Lying as the town does upon one of the Roman roads between Rigodunum (*Ribchester*) and Cambodunum (*Slack*), and being itself a station, there could be little difficulty in the way of his arrival in this locality, although later travellers may have found the country wild and inhospitable. Local tradition also asserts that the church was intended to be erected on the site now occupied by the cross; but that whatever the workmen built during the day, was removed during the following night, by supernatural means, to the place where it was subsequently erected. Burnley would therefore be well known to the Saxons;—the nomenclature of the district attests their long occupation of the country;—its church would probably be one of the first to be erected after the conversion of the inhabitants to Christianity, and a *burh* for its protection would no doubt be erected on the steep cliffs of the Brun, by which the church is overlooked on the west.

But the proofs of Danish possession are not the less remarkable and conclusive. Almost every local name which is not Saxon, is either Danish or Norwegian in its origin. We have *Danes* House to the north of the town, and Saxifield, or Saxonfield *Dyke*, which is mentioned in a charter of the reign of King John, on the edge of a broad and easy slope within a short distance. New-*Kirks* are found both in Pendle Forest and in Rossendale; *Thorpe* occurs near Bacup; *Laiths* abound in all directions,

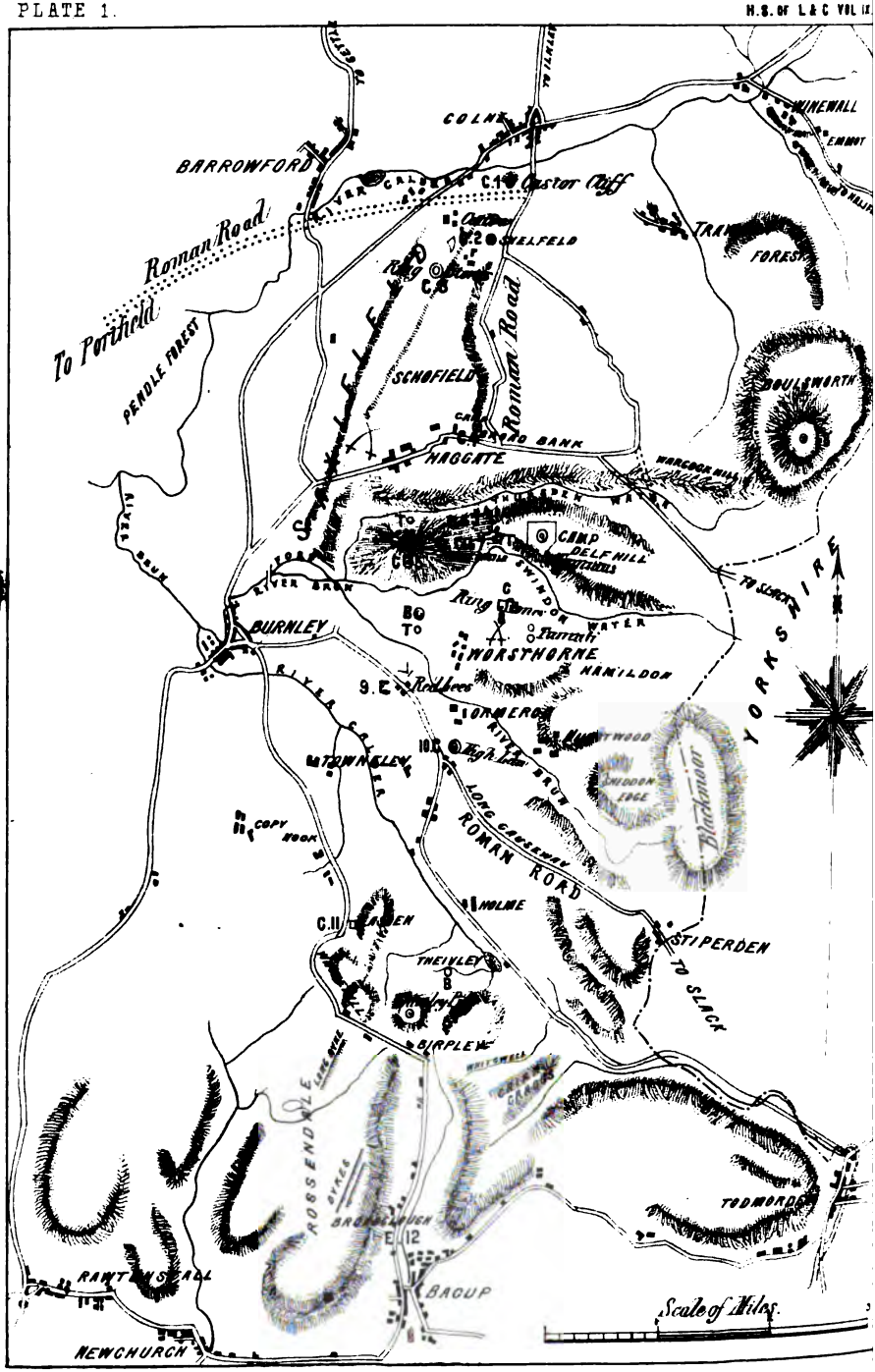
* See my *History of the Parochial Church of Burnley*, p. 10.

as Hey *Laith*, Moor *Laith*, &c.; *By* is found in Earby near Colne; *Holme* and *Longholme* are not far distant; Pin*how* and *Kell*brook are again not far from Colne. Shel*feld*, Longridge *Fell*, Riddy-*halgh*, Musty-*halgh*, *Haulgh*-head, Brun*shaw*, Wal*shaw*, Hag*gate*, Narrow*gate*, *Laund*-booth, *Scarth Rake*, and a multitude of others might be pointed out as decidedly Danish names of places; whilst *Winwall*, *(the place of contention)*, near Emmot Moor, and the *Old Dyke*, indicate intrenchments which have now almost wholly disappeared during the progress of cultivation; but taken together with *Warcock* Hill in the same neighbourhood, may carry us back in imagination to those dreaded banners, blazoned with the Danish *raven*, which floated aloft during the conflicts we have undertaken to illustrate. *Toft* and *Garth* occur in deeds without date; *Beck*, *Biggin*, and *Tarn*, are still heard daily in common conversation; nor would it be difficult to add considerably to the lengthiest of the published lists of these certain indications of Danish occupation.

Again, it is not at all improbable that Athelstan himself visited the neighbourhood of Burnley. Baines in his *History of Lancashire*, vol. iv. p. 371, asserts, on the authority of the *Mundana Mutabilia*, *Harl. MSS.* 1727, *fo.* 336, that a deed exists in the Saxon tongue, granting the lands of Elston, or Ethelston, to Ethelston of Amounderness at the time when he was "lying in camp in this country upon occasion of war"; and in A.D. 926, both the *Saxon Chronicle* and Florence of Worcester bear testimony to his confirming a treaty of peace between the Welsh, Scots, and Northumbrians, whom he had subdued, "at a place called Eamot, on the fourth before the ides of July." He also expelled Guthfrith from Northumbria in A.D. 927. Where Eamot was situated the chroniclers do not say, but its derivation from Ea=water, and Munt=mouth, indicates the mouth of the water, and *Emot*, a hamlet and a large estate in the Forest of Trawden, near Colne, both answers to the etymological requirements of the name in the Hallown or Saint's Well, which pours forth an abundant stream, and has besides given name to a family whose ancestry is too ancient for genealogists to trace. *(See Whitaker's Whalley, p. 397.)* It can therefore scarcely be doubted that this is the place intended, and if so, Athelstan would be well acquainted with the nature of the country. We must consequently inquire whether the *military* defences of this portion of the English Appenines were such at that period as to warrant his presence in these districts when engaged in warfare against Anlaf and the Danes.

The existence of a line of fortifications between Colunio (*Colne*) and Mancunium (*Manchester*) on the lower range of hills which divides Lancashire from Yorkshire, has been known to antiquaries ever since Dr. Whitaker completed his *History of Whalley* in 1818. He supposed the line to extend from Colunio to Cambodunum, but this I conceive is a mistake; for neither the locality nor the Ordnance maps give indications of any fortifications farther *east* than those on Twist Hill; whilst on the other hand they represent the line as continuous in the direction of Manchester, from Colne, by Littleborough and Rochdale. Several of these intrenchments were unknown to the historian of Whalley; but a recent examination of the principal portion of these interesting remains, (October 25th, 1856,) in company with my friend Benjamin Chaffer, Esq., has enabled me to enter more fully into their peculiarities and situation. For the sake of clearness I shall take them in order from northeast to southwest, in accordance with the numbers on the accompanying sketch-map of the district.

1. Castercliff is a formidable looking fortification, at a short distance from Colne, in a portion of what was once the Forest of Mereclesden (*Marsden*), and is supposed to have been the *castra æstiva* of Colunio. Many Roman coins have been found in the valley below, and it is situated on the Roman road between Colunio and Cambodunum, and at the junction of this with the vicinal way from Rigodunum (*Ribchester*) to Alicana (*Ilkley*). The intrenchments form a parallelogram measuring about 550 feet long by 520 feet broad; but the walls appear to have enclosed an area of about 380 feet in length by 340 in breadth. The camp has been protected on the southwest front by a deep gully and also by a double vallum and foss, which are still entire about the whole crest of the mound. We were informed that many hundreds of tons of stones have been carted away from the walls within the last thirty or forty years, all of which appeared to have been subjected to intense heat. Large quantities still remain half buried in the soil, many of them completely vitrified, and others presenting a singularly mottled appearance from having been only burnt half through. The burnt sandstone and lime form excellent manure, and at the time of our visit a luxuriant crop of corn and cabbages had just been gathered from the broad ditches of this Roman camp. A less elevated plateau of considerable extent bounds the northeastern slope, which is again protected


COLNE
BARROWFORD
Roman Road
To Portfield
PENDLE FOREST
C.1
Castor Cliff
C.2
SWELFELD
C.3
SCHOFIELD
Roman Road
HAGGATE
CAMP
DELF HILL
BURNLEY
WORSTHORNE
HAMILDON
ORMERO
TOWNLEY
COPY NOOK
ROMAN ROAD
HOLME
C.11
THEIVLEY
BIRPLEY
STIPERDEN
TO SLACK
ROSSENDALE
BACUP
NEWCHURCH
TODMORDEN
BOULSWORTH
MINEWALL
YORKSHIRE
Blackmoor
Scale of Miles.

by a steep cliff sloping down to the Calder, near Waterside. This would afford a convenient space for the exercise of large bodies of troops, or for the protection of the cattle belonging to the garrison; and it has probably been used for such purposes by the successive masters of the fortification. Being almost inaccessible on all sides except the east, where they are skirted by the Roman road, these defences, when complete, must have constituted one of the strongholds of the North, since they overlook the whole of the Forest of Trawden, Emmot Moor, a great portion of Craven, with the valley of the Calder, and terminate the eastern limit of the ridge on which Saxifield is situated. Castercliff has evidently been the *key* of this portion of Lancashire in the hands of the Romans, and its importance would undoubtedly not be overlooked by the Saxons and the Danes.*

2. Crossing Gib Clough, and passing along the Roman road, portions of which still remain entire, a distance of less than a mile brings us to SHELFIELD, on the summit of which the late R. T. Walton, Esq., erected a tall granite cross. This erection probably stands in the centre of a large *circular* encampment, of which some portions of the ditch are indicated by the undulations of the surface, and by a swampy part of the ground on the western slope.

3. RING STONES HILL, at a short distance, formerly contained a large circle of stones, erected either for purposes of burial, worship, or defence; but they were dug up a few years ago, and have since been used for repairing the roads.

4. After crossing Float Bridge *Beck*, and Catlow Brook, we next arrive at BROAD BANK, near *Ridihalgh*, on the summit of which are the remains of a *circular* intrenchment, measuring about 150 feet in diameter. There is no appearance of walls, but both the vallum and foss are perfect throughout the whole circumference. This station occupies a very commanding position, overlooking the whole of the Valley of Thursden, with the heights of Boulsworth in the distance, but it does not appear to have been of a permanent character.

5. Passing through Thursden Valley, to a corresponding crest on the opposite ridge called BONFIRE HILL, at the distance of about a mile, we find another *circular* intrenchment, 130 feet in diameter, and very similar

* In the map, C indicates a camp, B a beacon, T a tumulus, and F an entrenchment.

in character to the last. This encampment is surrounded by an earthwork rampart, which is still comparatively perfect on three of its sides, and easily traceable on the fourth. The rampart measures 700 feet in length by 450 in average breadth; thus constituting a most formidable post in an almost inaccessible position to an attacking force. At a short distance, on what is now called Delf Hill, there is a *circular* tumulus of loose stones, about forty feet in diameter, and two feet in average height. Both the station and the tumulus occur on heights which overlook the Valley of *Swinden*; the slopes of Briercliffe lie to the northwest, and Burnley is visible in the distance.

6. PIKELAW, on the same ridge, has much the appearance of a large tumulus; but, as its name indicates, it has long been used for the purposes of a beacon. There are two circular tumuli on Beadle Hill, within a short distance, but they have almost disappeared in course of cultivation. They have been composed as usual of loose stones mixed with earth, and have not measured more than thirty feet in diameter when perfect.

7. From this point the line diverges a little to the west, and on arriving at Twist Hill, which overlooks Holden Clough, Rogerham, and *Swinden* Valley, we find the remains of a *square* camp, which has long been known as TWIST CASTLE. How it came to have this designation is by no means clear. Dr. Whitaker supposes the name to have reference to the ancient forests which once covered the district, and to indicate the "*boundary of oaks.*" Should this conjecture prove correct, the castle will probably have given name to the township of Ex*twistle*, in which it is situated. Each side of the encampment measures about 150 feet in length, within the trenches; the remains of the foss and vallum are very distinct; the latter being elevated considerably above the surface of the moor; and spaces still remain for the Pretorian and Decuman gates. A smaller enclosure occurs at the southeast corner, measuring about sixty feet square; and at a short distance is a *circular* tumulus of loose stones, about 45 feet in diameter. A few years ago this was elevated five or six feet above the surface, but its height has been much diminished in consequence of the stones having been carted away to form the road to the new quarry near Monk Hall. No remains were found in the tumulus during the excavations, but this may perhaps be accounted for from the fact that as yet the *top* only has been removed. Twist Castle occupies a commanding position on the western

slopes, and taken together with the next in order, must have presented formidable difficulties to an attacking force.

8. Leaving Twist Castle, and crossing Swinden Valley a little to the west, we arrive at Slipper Hill, near Wasnop Edge in Worsthorn. There are here the remains of RING STONES CAMP, an ancient enclosure much the same in character with the one just described. It is *oblong* in form, measuring about 200 feet in length by 160 feet in breadth, and has a smaller enclosure of about 50 feet square on the northeast side. The foss appears to have been upwards of twenty feet in breadth, and the elevation of the vallum is still considerably above the general surface. On a crest above are the remains of a beacon, and a *circular* tumulus is situated at a short distance, which although now almost obliterated, has originally measured about fifty feet in diameter. The name Ring Stones has probably been derived from the tumulus, or it may be from a circle of stones which has been removed at some former date, or again, from the death of *Hyrngyr* during the night attack. This last conjecture is rendered very probable from a remarkable tradition which is still prevalent in Worsthorn, to the effect—that the Danes constructed these defences—that a great battle was fought on the Moor—and that *five* kings were buried under the mounds.

9. Following the same direction, and crossing the River Brun through Thornden Clough, we next arrive at the RED LEES INTRENCHMENTS, which are described by Dr. Whitaker as certain "strange inequalities in the fields," having the appearance of foundations or temporary earthworks. They command the valley of the south branch of the Calder, and also a considerable portion of that of the Brun; their dimensions are such that the progress of agriculture has not yet been able to efface them.

10. The crest at HIGH LAW, within a short distance of Red Lees, was formerly crowned with a small fortification and several tumuli, but the greatest portion of these remains were removed so early as 1695. In that year many medals and coins, mostly belonging to Legions I, II, VII, VIII, XV, and XIX, were found here (during the removal of the stones and earthworks,) which were presented to the author of the *Ducatus Leodiensis*, by Charles Towneley, Esq., of Towneley, brother to Richard Towneley, Esq., the mathematician and philosopher. Thoresby describes them as having

been found "near Mere Clough, on the skirts of the wild moors that border upon Yorkshire; where a considerable heap of stones, &c., evidence the ruins of a Roman Fort or Station, as I am informed by Mr. Towneley, who generously sent me above twenty Consular and Imperial coins *that he had procured from the workmen.*" (*Musæum Thoresbyanum, pp.* 7, 8.) I have recently seen a coin belonging to the emperor Probus, which was found at Overtown in the same locality.

11. We now diverge a little to the east, and crossing the entrance of the gorge of Cliviger, we find EASDEN FORT on the opposite eminence. It is a small *angular* fortification, overlooking the passes to Todmorden and Halifax. The winter torrents have well nigh washed away the cliff on which it is situated, but enough remains for its identification as one of the series. Above Copy Nook plantation, at no great distance, are several oblong tumuli, which are still mostly entire. Tradition states that a battle was fought here, on Oliver Hill, during the Civil Wars, and that these are the graves of the slain; it is however much more probable that these tumuli cover the remains of more ancient warriors than those engaged in the struggles of the Usurpation.

12. Thieveley Pike, an ancient beacon on the crest above, looks down upon the OLD DYKE at no great distance on the Rossendale slope, and also commands a full view of BROADCLOUGH DYKE, a formidable and gigantic intrenchment near Bacup. It measures more than 1800 feet in length, is situated at the edge of a gentle slope, and has a trench at least 54 feet broad at the bottom. What can have been the object of such an extensive earthwork can of course only be matter for conjecture. From its position, it is capable of protecting a large army in front, but it is easily accessible from the east, and must have been abandoned by its defenders whenever the enemy had turned their flank. Its construction can only have been suggested by temporary necessities, since it has evidently been abandoned in an unfinished state. The forest of Rossendale in the times of the Saxons and the Danes, would have a real existence, and its sturdy oaks, of which the remains are still dug up in every field, might recall to mind the wood near which Adalis made the night attack, and where Hyryngr and the Bishop of Sherborne fell, had not Worsthorn Moor a better claim to be considered as the theatre of these events. Dr. Whitaker conjectures that the name is derived from Wrdeston, or Wrtheston, the town or place of

Wrthe, "a genuine Saxon name, probably of the first proprietor," for such is the orthography in a charter of the time of Edward III. But it is not improbable that Worsthorn may after all be *Werstan's* Moor. The death of so high a dignitary of the church would be looked upon as a principal incident of the night attack; the field upon which he fell would naturally be associated with his name; and the tumulus near Ring Stones Camp, as tradition states, may contain the ashes of one or more of the opposing chiefs.

Such then are the remains of this line of fortifications, within the distance of little more than nine miles. For number and importance, they are probably unequalled in any part of the kingdom. Those at Castercliff, Twist Castle, and Ring Stones Camp, I take to be decidedly Roman in their origin. In the hands of such disciplined forces, they would effectually serve to keep the Brigantes in subjection, and the Sistuntii in security; the stations would be easily accessible to troops from Eboracum and Alicana; from Mancunium and Cambodunum; and from Coccium, Rigodunum, and Ad Alaunum; since they lie upon the vicinal way between Heptonstall and Colne, and upon the *Long Causeway*, which still exists as a high road between Halifax and Burnley, and is known as the "Danes Road" in one part of its course.* After the departure of the Romans, these fortifications would be kept up by the Roman-British troops as a protection against the inroads of the Scots and Picts, and would again of necessity be taken possession of by the Saxons when they undertook to defend the country against their devastating incursions. When the Danes began to contend with the Saxons for the mastery, they would naturally be compelled to attack these strongholds of Northumbria, and the slopes to the east and west of this ridge of hills would form the battle-fields for their possession. To these fierce invaders then, or their opponents, I am disposed to attribute the formation of the *circular* encampments along the line, as well as the *Dykes* at Saxifield, Thieveley, and Broadclough Circular earthworks for the defence of their camps are known to be almost peculiar to the Saxons, the Danes, and their more northern allies; who nearly always chose the tops of hills on which to construct them; and they were always protected by a vallum and a foss.† Their mode of sepulture too corresponds with the general character of the tumuli found on the slopes adjoin-

* Whitaker's *Manchester*, vol. i., p. 132. † Forester's *Henry of Huntington*, p. 158.

ing. Small ones, composed of earth and loose stones, were formerly very abundant, and on Catlow, Extwistle, and Worsthorn Moors, rude earthenware urns are occasionally found a foot or two beneath the *flat* surface, surrounded by a few small stones set upright, and mostly filled with pieces of charcoal and calcined bones. After the destruction of the *burh* at York by Athelstan's forces, as already mentioned, I know of no locality in Northumbria able to compete with this line of defences in a military point of view. From beyond Castercliff to Manchester, each crest can boast of either its *burh* or its *beacon*. The signal fire on Boulsworth, immediately above the principal fortifications, answers to that on Pinhow; Pikelaw to Thieveley; Homildon to Pendle and Portfield; Billinge to Mellor; Cridden to Rochdale, Littleborough and Manchester; and thus whilst each hill top and slope bristled with troops, and sounded the alarm of war, the whole country could readily be roused to arms for the protection of their "hoards and homes." Whoever held these mountain fastnesses, most certainly secured the possession of some of the most populous and fertile districts of Northumbria. Their magnitude and importance in those times of comparatively rude warfare, would neither be unworthy of the presence of Athelstan himself, nor could Anlaf, after the expulsion of Alfgeirr, have chosen a more secure line of defences when providing for the contingencies of the Battles of the Brun.

The *Saxon Chronicle* is entirely silent as to the fitting out of Anlaf's expedition. It substitutes poetry for prose in its description of the battle, and thus has preserved to our times one of the noblest lyrics of the Anglo-Saxon bards. Florence of Worcester calls him "King of Ireland, and many other Isles," and further asserts that he entered the mouth of the Humber with a powerful fleet. Simeon of Durham, describes the naval force as consisting of 615 ships, but says nothing respecting its destination. (See the *Monumenta Historica Britannica*, p. 686.) Later annalists generally agree in supposing that the principal portion of the expedition was fitted out in Dublin; nor do they find any difficulty in bringing it round to the mouth of the Humber. Mr. Wright, in Tallis's *History of England* says, the fleet sailed "round the north of Scotland," but Hume is of opinion that it merely hovered about in the Irish sea. Without doubt, Anlaf would find it expedient to join the naval forces of his northern allies with a powerful division; the estuary of the Humber would form the

most convenient harbour for their debarkation; and hence we may reasonably conclude that Florence and his copyists are correct in the main. But it must also be remembered, that at this period, the coasts of Lancashire and Cheshire had long been in the hands of the Danes; Wirral occasionally presented the appearance of a vast camp; Kirkham was one of their strongholds in Amounderness; the estuaries of the Dee, the Mersey, the Ribble, the Wyre, and the Lune, were familiar to the leaders of these daring mariners; and the "Danes Pad," through the Fylde district, formed one of the principal roads by which they penetrated into the interior of Northumbria and Mercia.

It is therefore, not at all probable, that so skilful a leader as Anlaf would omit to send large detachments into the mouths of the Ribble and the Wyre. These ports lie almost opposite to Dublin, and would be much more easily accessible than the Humber; the troops would be necessary in order to effect a junction with the Cumbrians and the Welsh; whilst the ships there stationed would afford the best means of passing

"O'er the deep water
Dublin to seek,"

in case of defeat. The confederate forces would then effect a junction with Anlaf by passing along the Roman roads which intersected the district, after he had penetrated "*far into England*," and I venture to presume that the whole of his army was ultimately concentrated in the neighbourhood of the line of fortifications here described. Athelstan and his forces would take up corresponding positions in the front; the existing Dykes may have been formed as temporary lines of defence; and the great battle was most probably fought on the slopes of SAXIFIELD, or SAXONFIELD, immediately in advance of the principal encampments. Dr. Whitaker in his *History of Whalley*, has preserved the local tradition which prevails in Burnley and its neighbourhood, of some great engagement "during the Heptarchy" at Saxifield, but he did not consult the older historians for any confirmation of its truth. The frequent discovery of bones, some of them apparently human, still serves to keep alive the popular story, and pass it down to each succeeding generation. Such remains were lately met with in large quantities when digging the cellar at Lower Saxifield House; and not long ago a large number of small tumuli, popularly termed "the graves," were levelled by the farmers for purposes of cultivation. Iron arrow-heads are sometimes found in the

mosses, and in 1802, a massive gold ring, weighing 1½ ounces, was found near Holme.* But the most important discovery remains to be noticed. In 1840, upwards of 9,000 coins, a number of bars of silver, armlets, broken rings, &c., were found enclosed in a leaden chest near the track of the Roman road from Coccium *(Walton)* to Cambodunum; which is now well known to numismatists as the "Cuerdale Find." The coins were all minted between A. D. 815 and A. D. 930, and consequently "the treasure must have been buried during the first half of the tenth century."† Some of these coins were Arabic or Kufic; about 1000 were French; others were minted in North Italy; 2,800 belonged to the Anglo-Saxon Kings, of which 860 were of the reign of Alfred; 3,000 were of a peculiar character, bearing the inscriptions Siefredus Rex, Sievert Rex, Cnut Rex, Alfden Rex, and Sitric Comes. All these are the names of "mighty Scandinavian chiefs, who in the ninth and tenth centuries, ravaged the western lands," but Cnut's were the most numerous, numbering in all about 2000 pieces. The Sitric, here mentioned, fell in battle in England about A. D. 900; Alfden perished at Wednesfield, in A. D. 910; Sigfrid ravaged the English coasts in A. D. 897; and Cnut was a son of the first Danish monarch, who is said to have fallen in battle somewhere on the coasts of Britain. It has been remarked that no similar coins have been found anywhere else in England, except a few of Cnut's at Harkirke, near Crosby, in Lancashire; and hence the conjecture seems reasonable, that the "Cuerdale Find" formed a portion of Anlaf's treasure, which his followers abandoned and buried during their hasty retreat to the ships stationed in the estuaries of the Ribble, the Mersey, and the Wyre. *Dane's House* may possibly have formed Anlaf's head-quarters, either before the battle or after his defeat, and hence its name; for the "ship-fleet" destroyed by Athelstan's forces, as stated in the *Saxon Chronicle*, would probably be those left at the mouth of the Humber; since, he is represented by some historians as passing through Beverley on his return from the field of battle; or it may have been at the mouth of the Wyre, where human bones have been found, and where local traditions place the scene of a conflict with the Danes at the prows of their vessels.

But the evidence in favor of BURNLEY is not yet exhausted, for the *name* itself must not be overlooked in estimating the probabilities. The

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* *See Appendix.* † Worsaæ's *Danes in England*, p. 49.

river *Brun*, as we have seen, traverses the locality where tradition says the battle took place, and it has given its designation to Burnley from a period beyond the reach of history. In some old charters, the name of the town is spoken of as *Brumley*; others give it as *Brunley*; and so it continued to be named until about the middle of the last century. William of Malmsbury, and Ingulf of Croyland, speak of the conflict as the battle of *Brunford;* and the *ford* across the Brun, near Burnley, which lies at the foot of the long declivity on which Saxifield is situated, had given the name of Heysand*ford* to the property of Sir Oliver de Stansfeud, in the reign of Edward the First. Geffrei Gaimar gives the variation *Burnwest*, which is almost preserved entire in *Burnwains*, the name of a farm in the neighbourhood; and the Wendune, or *Wendun*, as Thorpe writes it, of Simeon of Durham, is well-nigh identical in sound with *Swinden*, which we have seen is the name of a valley, and also of a mountain stream of some considerable magnitude which intersects the line of fortifications.

The transition from Brunford to Brumley, Brunley, Brunanley, and Brunanburh, appears to me so natural and consistent as to place it beyond reasonable doubt, that they can only indicate the same locality; and taking this similarity of name in connection with all that has been previously advanced, I am of opinion that the claims of Burnley have been fully sustained, and that it may now be considered as very nearly a *certainty* that the slopes of SAXONFIELD witnessed the crowning incidents of the memorable BATTLES OF THE BRUN.

APPENDIX.

ON SOME FUNEREAL URNS FOUND AT CATLOW, &c., &c.

The remains of antiquity are not uncommon in this district, for in addition to the Roman Coins found at Castercliff, it may be mentioned that others have been met with at Emmot, Wheatly Lane, and Mereclough. A tumulus which was opened near Law House, Cliviger, in 1763, is said to have contained a kistvaen and a skeleton; another in the vicinity contained a rude earthenware urn, partially filled with calcined bones. In 1766, a glass vessel was found at Overtown, near Towneley, filled with brasses of Constantine and Licinius; and in 1773, two enamelled fibulæ of copper were found on the moor above Holme. Some years ago, Mr. Spencer, of Halifax, opened a portion of the tumulus on Twist Hill, when an earthenware urn was found of a similar character to that found near Law House. Mr. Richard Shaw, about the same time, discovered a portion

of what he conceived to be the neck of a jug, when excavating one of the small tumuli on Worsthorn Moor, but he has unfortunately lost the specimen. The most interesting discovery, however, was made at Catlow stone-quarry in March, 1854, when two or three earthenware urns were met with a little below the surface, when clearing for the flag-stone rock. The urns when perfect, measured about 14 inches in depth, and 9 inches in diameter at the mouth, with a considerable swelling at the centre, as represented in Fig. A of the accompanying plate. They are formed of very coarse earthenware, unglazed, and are very slightly baked. The outer and inner surfaces are of a brown colour, and are considerably harder than the inner substance of the pottery, which appears of a much darker hue, as if it had been saturated with some liquid. The clay has apparently been mixed with straw, small portions of quartz, and rough sand; and is on the whole not very dissimilar to the coarse red earthenware still manufactured at Causeway Side, in Cliviger. This pottery has existed from a very remote period, and the character of the workmanship, *even now*, affords sufficient proof that rude material and construction are not always indicative of extreme antiquity. In general appearance, all these urns are not unlike that found in the Isle of Wight, which is figured, No. 28, Plate xiv, in Akerman's *Archæological Index*, as Anglo-Saxon, but is described, page 132, with a doubt as to whether it does not in reality belong to the Celtic period. The urns contained large quantities of calcined bones, pieces of charcoal, and soft dark earth. Most of the bones are supposed to be human, but are mixed with others belonging to the horse, and some of the lesser animals. A rude piece of flint was found amongst the bones, but from its decayed state, it is not easy to determine whether it has been an arrow-head, or a small celt. Two ivory bodkins were also found at the same time, which are represented of the full size in Figures B and C; they are exceedingly friable, either from age or from having been subjected to the action of fire before being deposited in the urns. The ornamental work on the outside of the urns found both at Catlow and at Extwistle, is precisely similar, and has been formed by very rude means; all the streaks and punctures are coarse and irregular, nor do they appear to have been formed by any instrument less primitive than the point of a stick. The urns, when found, were very much broken by the workmen, who were more intent upon finding treasure than careful to preserve these memorials of antiquity. That most perfect is in the possession of Captain Sagar, of Southfield, and the other has been presented by him to the museum of the Burnley Church of England Literary Institution, and is at present under the care of George Smirthwaite, Esq., Surgeon, who has kindly permitted me the free use of his collection in illustration of this account. Mr. Mayer, of Liverpool, considers these urns to belong to the British period, and there can scarcely exist any doubt as to the correctness of his opinion.

ONE SIXTH SIZE.

NOTES ON THE YAK, OR GRUNTING OX, AND OTHER RUMINATING ANIMALS FROM CENTRAL ASIA.

*By Thomas J. Moore, Esq., with additional Notes by Captain Smyth.**

(Read 18th December, 1856.)

In the month of March last, a communication on behalf of Captain Edmund Smyth, of the 13th Bengal Native Infantry, was made to the Library and Museum Committee in this town, stating that Captain Smyth, then absent on the Turkish Contingent, was desirous of presenting to the British Museum, and the Museums of Edinburgh and Liverpool, skins of the Yak and other Ruminating Animals recently shot by him in the Himalayas. The offer was most willingly accepted. The specimens, on arrival, proved to be a remarkably fine wild Bull-Yak, a male and female Argali Sheep, the former about four years old; an adult and a yearling Burrhell Sheep, and a Jemlah Goat. The Yak and the adult Burrhell, being all that room could be made for, were immediately stuffed and exhibited.

As all four species are extremely rare in collections, and are very remarkable animals, I have thought that a few notes respecting them might be of sufficient interest to bring before the notice of the meeting.

I shall refer to them in the order in which they occur in the invaluable manual of this Order of Mammalia, forming part of the series of Catalogues of the Zoological collection in the British Museum, the volume on Ungulata Furcipeda, by Dr. Gray, to which I have been much indebted in compiling the following pages, while it is to Dr. Gray's suggestion, I believe, that we are originally indebted for this most valuable donation.

The Yak or Grunting Ox of Tartary and Thibet.

Poëphagus grunniens, (Linnæus).

The Oxen are divided by Dr. Gray, in the work already referred to, into two groups, each having distinctive characters and habits. The first con-

* Since the following paper was read before the Society, Capt. Smyth has returned to England, and on visiting the Museum, he very kindly promised to favour me with his notes on these animals. These notes, extracted from his journal written on the spot, will be read with extreme interest, and I beg to express my best acknowledgements to Capt. Smyth for permission to add them to my paper, in which they supersede much that I had written on the subject.

tains the True Oxen, or those living on the plains of warm and temperate regions; and the second, the Oxen of the mountains or snowy regions. This latter contains the Yak, the Takin (*Budorcas taxicola*, Hodgson, a very remarkable Ruminant from the eastern Himalayas,) and the Musk Ox of the Arctic regions.

The Yak was placed by Linnæus, with all other Oxen known to him, in his single genus *Bos*, as *B. grunniens*. From this it was removed by Col. Hamilton Smith, in 1827, and placed in his genus *Bison*, (as *Bison Poëphagus*,) together with the Gayal of India, the Aurochs of Europe, and the Bison of America. From these it was further separated by Dr. Gray, in the Catalogue of the Mammalia in the British Museum, published in 1843, and formed into a distinct genus as *Poëphagus grunniens*.

The Yak is one of the very few animals existing both in a wild and domesticated state; and as the former is very little known, a brief description of our specimen may be desirable.

DIMENSIONS.

	Ft.	In.
Length of skull (stuffed) from the nose to the occipital ridge	1	10
Width between the orbits	1	0
Width between the horns at base	0	8
Length of each horn measured along the curve	2	2½
Width between the tips	1	2
Length of ears	0	5
Length from the nose to the root of the tail	9	4
Do. to the extremity of the tail	12	4
Height at withers	4	6
Do. at rump	4	4
Girth behind the shoulders	7	3
Length of tail	3	0
Do. of the bushy portion	2	4
Length of pendulous hair at flanks	1	6
Do. do. of tail	2	0

The general colour of our animal, which is in its summer coat, is a deep and rich hair brown, palest on the withers, where it is slightly freckled with grey, and becoming a darker brown in every direction as it recedes from this. The hair of the forehead is rather long, and dark brown, the hairs tipped with grey, producing a grizzled appearance, which increases

towards the nostrils, while the hair becomes short and close; above the centre of the nostrils is a patch of white, which colour also pervades the lips, and slightly the chin. The muffle, or naked space between the nostrils, is contracted to less than an inch in breadth on the lip. On the ears, cheeks, lower jaws, and upper portion of the throat, the hair is rather long and black; between the horns, and behind the occipital ridge, it is divergent and grizzled. The legs are very dark brown; the forelegs, from the shoulders nearly to the knees, are covered with long black silky waved hair, as is very nearly the whole length of each flank, and a line rising obliquely across the buttocks, where the colour of the long hair changes to a brown hue. This long pendulous hair, which constitutes one of the chief characteristics of the species, attains its greatest length on the groin and tail. The tail at its origin is clothed with short adpressed hair, which rapidly increases in length, and forms a huge black whisk, completely hiding the remainder of the caudal extremity. Along the ridge of the neck is a dark brown streak, reaching nearly to the withers, which are free from any medial line; but the lumbar region is traversed by a pale central streak, which becomes dark brown as it approaches the tail. From the hip a blackish line passes diagonally across the loin; this is composed of slightly longer hair than that on the upper part of the body, the whole of which is short and close. In winter the long hair of the flanks probably extends much higher.

The horns are black, very strong, compact, and roundish, diverging outwards at the base, and slightly forwards, then bending backwards with a bold curve, the tips converging towards each other. The hoofs are solid, compact, and black.

Dr. A. L. Adams, of the Army Medical Staff, has favoured me with the dimensions of a Yak shot by Mr. Peyton, of the 87th regiment, near Yarkund, Chinese Tartary, which was considered so unusually fine an animal as to lead to these dimensions being taken; and they only exceed those of our specimen by 2½ inches in the length of horn, 1½ inch in circumference, and 6½ inches in span, the length of face and width between the orbits, being the same in both. Dr. Adams states that the grey hairs about the nostrils are found only in wild, not in domestic examples.

Being found over a wide extent of territory, the Yak is known by a

variety of names. In Thibet the bull is called *Yak*, and the cow *Dhé*; in the same country *Dhong* is the appellation given to the bull in its wild state; and *Yak-mo* is another name for the cow, but whether wild or tame is not stated. In Hindostan the species is designated *Soora-Goy*. *Chauri-Gau*, and *Kash-gow* are also applied, the former in Nepaul.

The half breed, with what Mr. Vigne ("Travels in Cachmere") calls the common cow, is stated by him to be called *Bzoh*.

The cross common in the north-west Himalayas between the Yak and the Hill Cow (much resembling the English Cow) is called *Zobo*.

Pennant speaks of two domestic varieties, called by the Mongols respectively *Ghainoûk* and *Sarlyk;* the former he calls the original Thibet race, the latter a degenerate kind. He also speaks of the wild race under the name of *Bucha*.

The exact extent of its range in a wild state is not clearly ascertained. All authors agree in its being found in a thoroughly wild and aboriginal state in Thibet, where it is also domesticated, but owing to the general practice of turning herds of the tame breeds at large to graze on the mountain ranges at will, for several months in the year, there is reason to believe that they have often been mistaken by travellers for the unreclaimed animal. Mr. Hodgson, the late British Resident at Nepal, says that the Yak inhabits all the loftiest plateaux of High Asia, between the Altai and the Himalaya, the Belut Jag and the Peling mountains, and that it is found tame as well as wild, but without defining its limits in the latter state. The northern slopes of the Himalayas, that descend upon the plains of Yarkund, the confines of Chinese Tartary, Pamir, and the upper part of Budukhshun, are inhabited by the wild race, to which must be added the locality of our own specimen, namely, the high mountains to the north of the Milum and Neetee passes from Almorah to Hoondes. The Huzarra ranges and Kunawar are also spoken of, but these require confirmation. Little Thibet is too hot for them *in winter*, Mr. Vigne states, and that in fact the real Yak is not common there, but that those of the half breed are plentiful.

Capt. Broome, quoted by Mr. Blyth, has heard of Yaks being seen wild about Rodok, where they are exceedingly savage and dangerous to travellers in the passes. Mr. Blyth also quotes Timkowski's assertion, that both

wild and tame Yaks are found on the western frontiers of China, and in all Tangout.

The specimen in the East India Museum, agreeing with ours in colour, was obtained in Ladakh by chace, and exhibits the natural or wild state.

Capt. Turner gives a very comprehensive history of the Yak in the "Account of his Embassy to Thibet," which was published in 1780. He writes that these cattle are pastured in the coldest part of Thibet, upon the short herbage peculiar to the tops of mountains and bleak plains. The chain of mountains situated between the latitudes 27° and 28°, which divides Thibet from Bootan, and whose summits are most commonly clothed with snow, is their favourite haunt. In this vicinity the southern glades afford them food and shelter during the severity of winter; in milder seasons the northern aspect is more congenial to their nature, and admits a wider range.

Lieut. Wood, quoted by Mr. Blyth, says—"Other cattle require the provident care of man to subsist them through the winter, but the Yak is left entirely to itself. It frequents the mountain slopes, and their level summits, and wherever the mercury does not rise above zero is a climate for the Yak." Lieut. Wood further observes, that like the Elephant the Yak possesses a wonderful knowledge of what will bear his weight. If travellers are at fault, one of these animals is driven before them, and it is said that he avoids the hidden depths and chasms with admirable sagacity. His footing is sure. Should a fall of snow close a mountain pass to man and horse, a score of Yaks driven a-head answer the purpose of pioneers, and make, as his informant expressed it, a 'king's highway.' In this case, however, the snow must have recently fallen, for when its surface is frozen over, and its depths considerable, no animal can force its way through it.

Dr. Hooker, in his "Himalayan Journals," states that the Yak loves steep places, delighting to scramble among rocks, and to sun its black hide perched on the glacial boulders which strew the Wallanchoon flat, and on these boulders he always sleeps. The great altitude he inhabits appears to exempt him from the attacks of insects, as no large Diptera, bots, or gad-flies are there met with. The specimen of the domestic Yak, however, which reached Knowsley in life, discharged from its nostril, during its voyage, the larva of an insect about the size of a human finger; but this does not in any way disparage Dr. Hooker's state-

ment, as it was doubtless implanted in the animal after leaving its native heights. Though the Yak is indifferent to ice and snow, and changes of temperature, it cannot endure hunger so long as the sheep; and though sure footed, it cannot so well as the sheep pick its way on stony ground. Neither can it bear damp heat, for below 7000 feet liver disease carries it off after a very few years.

The wild race is spoken of by Pennant as exceedingly savage. If in the chace they are not killed on the spot, they grow so furious from the wounds that they will pursue the assailant, and if they overtake him they never desist tossing him on their horns into the air as long as life remains. Even when subjugated they retain their fierce nature, and are particularly irritated at the sight of red or gay colours. Pennant further remarks, that Ælian is the only ancient author who mentions this remarkable quadruped, which he describes as the Poëphagus, an Indian animal larger than a horse, with a most thick tail, and black, composed of hairs finer than the human, highly valued by the Indian ladies for ornamenting their heads. Each hair he describes as two cubits long. It was the most fearful of animals, and very swift. When chased by men or dogs, it found itself nearly overtaken, it would face its pursuers, and hide its hind parts in some bush, and wait for them, imagining that if it could conceal its tail, which was the object they were in search of, it would escape uuhurt. The hunters shot at it with poisoned arrows, and when they had slain the animal, took only the tail and hide, making no use of the flesh.

A very singular female head-dress, figured by Dr. Hooker, is to this day made in Thibet from its hair; and the animal is still shot with poisoned arrows. Dr. Hooker says it is hunted with large dogs; is untameable, and horridly fierce, falling upon you with horns and chest; and if he rasps you with his tongue, it is so rough as to scrape the flesh from the bone.

They rut in winter, and produce young in autumn. The calves are covered with rough black curled hair, like a curled haired dog; and when three months old they obtain the long hair on the body and tail. Dr. Hooker says they are very full of gambols, tearing up and down the steep grassy and rocky slopes. Their flesh is delicious, much richer and more juicy than common veal. The flesh of the old Yak is sliced and dried in the sun, forming jerked meat, which is eaten raw, and owing to the small quantity of fat does not become very rancid, but is palatable

food. When the calf is killed, the mother will yield no milk unless the foot or stuffed skin be given her to lick, which she does with eagerness, expressing her satisfaction by short grunts, exactly like those of a pig. This sound replaces in this species the lowing uttered by ordinary cattle, and from the peculiarity its name of "grunting ox," and its systematic one of "grunniens," are derived. It is, however, only emitted under emotion or uneasiness. The Yaks appear to be unusually attached to their young, for when the cows are driven with the rest of the herd to roam at large, and for a length of time, on the mountains, the calf is retained below as a pledge for the mother returning, in which she never fails.

The domesticated Yaks are used for a variety of purposes. They vary much in colour, ranging from red to black, and are irregularly marked with large patches of white; the hump and tail are often white, and the face and legs sometimes partly so. They cross readily with Zebus, and other cattle; hence, doubtless, the hump frequently spoken of as occurring in some individuals, and which appears to be wholly wanting in the wild kinds, though the spinal processes of the vertebræ are unusually developed, and produce very high withers.

Dr. Hoffmeister, who accompanied Prince Waldemar of Prussia in his travels in Asia, as physician, thus speaks of the varieties used for ploughing and riding. "The Yak-ox used in riding is an infinitely handsomer animal than that kept to the plough; it has a stately hump, a rich silky hanging, nearly reaching the ground, twisted horns, a noble bearing, and an erect head. Those used for ploughing are ugly and short legged, and hold their heads very low; the beautiful long silky hair hanging from below the belly is almost, if not entirely, wanting in them, no less than the bushy tail, which their avaricious owners commonly cut off, as an article of trade." The same writer states that a wooden plough is used, and that one man guides the Yak by the nose while another directs the plough.

"Although our path," the Doctor observes, "appeared, from a distance, to be extremely dangerous, it proved quite sufficiently firm and level for our broad-footed Yak-oxen, noble beasts with the thick silky white fringe under the body, and the bushy tail, both of which sweep the ground; but soon the steepness increased so much that these poor animals began to groan, or rather to grunt, in the most melancholy manner; and this

unearthly music gradually rose to such a violent rattle, that—driven rather by its irksome sound than by the discomfort of our saddleless seats—we dismounted at the end of the first half-hour."

Dr. Hooker intimates that the Lamas, nevertheless, relish this mode of travelling. They find the Yak's shaggy coat warm, and his paces easy; but their Yaks are always led, which does not appear to have been the case with the cavalcade above-mentioned. The Yak is a powerful beast of burden, and from its strength and hardiness accomplishes, at a slow pace, twenty miles a day, having either two bags of salt or rice, or four to six planks of pine wood, slung in pairs along either flank. Among the Wallanchoons, their ears are generally pierced, and ornamented with a tuft of scarlet worsted.

The splendid bushy tails of the Yak, which have no equal amongst quadrupeds, are used throughout the East as fly-whisks, and are known under the name of Chowries. They form one of the chief articles of commerce in Thibet, being used for various purposes of ornament, besides the highly useful one of brushing away the flies and mosquitoes. They are fastened as ornaments to the ears of elephants; the Chinese dye them red, and form the hair into tufts for their bonnets; the Turks and Persians make standards of them, though commonly named horse-tails, and dye them of various colours; and they are used to decorate the throat band and croups of horses. The hair of the flanks is used for ropes, which are as strong as those of hemp; and also for cloth for tents—which are, however, not impervious to wind and rain. Mats are made from the same material; and it is also made into a strong fabric, which is stated to make excellent riding trousers—doubtless, also, of lasting quality. The hair being applied to all these various and useful purposes, it is no marvel that, as I am informed by Dr. Adams, the attendants upon the Yaks are always remarkably industrious in combing their sleek and silky sides, and taking care to lose as little as possible of so valuable a commodity; which, besides the various uses enumerated above, is also employed in the manufacture of gauze shades, used by travellers for the protection of the eyes in crossing the snowy passes of Thibet.

The richest produce, however, of the Yak, because the most ample and continuous, is the abundant quantity and rich quality of the milk, and the butter produced therefrom, which is excellent. Curd is also made from it, and is eaten either fresh, or dried and powdered into a kind of meal. The

butter, however, is the chief article. It is preserved in skins and bladders, and the air being thus excluded, it will keep in the cold region which they inhabit throughout the year; so that their owners, after some time tending their herds, and accumulating a sufficient supply, have only to load the cattle, and drive them to a proper market with their own produce, which constitutes throughout Tartary a most material article of trade.

It will thus be seen, that this remarkable animal may claim to rank among the most useful animals which the great and good Creator has given to supply the wants of Man; it being as serviceable to the natives of these elevated and rigorous regions as the Camel is to the Arab, and the Reindeer to the Laplander. They live and thrive and enjoy life where the horse, whose work they perform, would perish; they are their own caterers in winter as in summer; their footing is sure where horses would be lost; they are used for the saddle, for ploughing, and as beasts of burden; their milk is remarkably rich and nutritious; their flesh is good; their hides and hair are both serviceable in various ways; their horns are used as drinking cups; their bones are consumed for fuel; while their flowing bushy tails form a ready-made remedy for the greatest pests of the East, besides being used as ornaments and trappings fit for, and found in, the service of its most luxurious princes.

A bull Yak, of the domestic breed, lived some time in England in the possession of Warren Hastings; a cow of the tamed race lived at Knowsley about two years, but died shortly after removal; a half bred bull, of which a characteristic drawing is given in the Proceedings of the Zoological Society of London for 1849, was also living at the same time in the possession of the late Earl of Derby, and is still alive at the Belle Vue Gardens, Manchester; and within the last few months about a dozen Yaks have been imported into Paris, for the purpose, if possible, of acclimatation.

Capt. Smyth's notes on the Yak are as follows:—

"My principal object in visiting Hoondes * and Thibet in 1853, was to get one or two wild Yaks, at that time looked upon as almost fabulous animals. The Bhootiahs (a tribe of hill-men, living far in the interior of the Himalayah, and carrying on a trade with the Tartars,) used to bring down to Almorah a great many stories of them, and a few skins; but none, so far as I was aware, had ever been seen by an Englishman, until 1852 one was seen and shot by Mr. Beckett, a sportsman from

* That part of Chinese Tartary north of the district of Kumaon and Gurwhal, and of part of Nepal.

Almorah, in Hoondes, just across the passes leading into that country from Almorah. The spoils (head and skin) were brought into Almorah in great triumph, and the event was very much talked about. In 1853 several were shot. I shot six (all bulls), five of them very near the place where Mr. Beckett shot his. A party who went to the Mausurobur lake, about eighty miles to the east of where I was, shot three; and Wilson, the great Himalayan sportsman, shot one or two in Roopshu, 300 or 400 miles to the north-west of where I was, near the great Chumereri lake; and I dare say several have been since shot.

"The nomade Tartars keep immense herds of the domestic Yak; I have sometimes, in passing an encampment of these shepherds, seen hundreds of Yaks, and thousands of Shawl-goats, and a beautiful sight it is. The goats are almost all snow white; the Yaks differ in colour, some are white, pie-bald, or blue, black, &c. They have long hair depending from the flanks, and nearly reaching the ground. The domestic Yak is not nearly so large as the wild one, and the latter is invariably a pure black, mingled with brown. It occasionally happens, however, that tame Yaks wander into the mountains, and meet the wild ones; the result is a hybrid offspring, nearly black in colour, with a white streak on its back, or a white foot, or spot somewhere. These, when grown up, are larger than the tame, but smaller than the wild Yak; and when it is a tame Yak-cow that has got loose, the young one seems to partake of the nature of its father, and the Tartars cannot tame it. The tame Yaks are used as beasts of burden by the Tartars in their trading operations; and they load them with borax, salt, &c., which they send across the Himalayahs, over the high passes, and dispose of to our Bhootiahs, who live on our side of the different passes, and who give them grain, cloth, and other English goods, in exchange. These Yaks (tame and wild) cannot endure the slightest degree of heat. The 'Jhoopoo,' a cross breed between the tame Yak and common cow, are much used as beasts of burden, as they can stand extremes of heat and cold almost equally well, and they are much tamer than even the tame Yak.

"The Yaks (tame and wild) are like all other animals in Thibet, provided with the fleece of 'pushm' wool, as a protection against the severe cold. This 'pushm' is a great article of trade; it almost all finds its way to Cachmere, across Chinese Tartary, where it is manufactured into cloth. The Yak 'pushm' is of course much coarser than the goat 'pushm,' and is not so valuable. The wild Yaks are found in certain localities in different parts of Hoondes and Thibet; the bulls herd separate from the cows, and wander a good deal; while the cows, from what I can learn, chiefly remain about the same place, in of course the very wildest places, where man scarcely ever goes. I never saw any cows, so I cannot speak from personal experience; but the party who went to the Mausurobur lake in 1853, appear to have seen an immense number of them.

"The high mountains to the north of the 'Milum' and 'Neetee' passes from Almorah to Hoondes, where I shot all my wild Yaks in 1853, are visited by the wild bulls only, between April and September. Cows are never seen there. Some of these mountains rise as high as 24,000 feet above the sea.

I saw altogether fourteen Yaks, nine one day in one herd, three another, and two another day, all bulls. They were in the most retired places: and I am told, and I think it true, that whenever they see a man, at whatever distance, off they pack, and do not stop anywhere within fifteen miles or so. I was led to believe they were very sagacious, but I found them easy enough to stalk, and stupid unwieldy animals after they were hit. I was also told they were very savage; and on my first meeting them, (nine of them,) and when by a judicious stalk I got within an easy distance, I certainly expected an adventure, but I was disappointed with all, except one, which charged me, but which I knocked over with a bullet through his head when within ten yards of me. I got three out of this herd of nine. They were, when I first saw them, lying down at an elevation of about 18,000 feet, on the snow.

"All the other Yaks which I saw were very nearly at as high an elevation. They seem to go down to grass about sunset, feed all night, and are up again at this enormous elevation by a little after sunrise. I am talking of the months of July and August. Doubtless in the winter months they go as low as they can; the lowest valleys in this country are about 14,000 feet above the sea. I have seen their traces very numerous as high as 19,000 feet, and in the valleys as low as 15,000 feet. Those at the latter elevation were always old traces, doubtless of April, May, and June, before the passes were open, and before a single man had arrived in the country. One of the six that I shot had a white mark on the back, and he is smaller than the others, shewing his descent (on his father's side) from a tame one. This specimen is now set up in the Edinburgh University Museum. In 1854, the only wild specimens of this animal in England were, one in the India House Museum, and one in the Crystal Palace.

"Wild Yaks are known to exist in the Karakorum mountains, north of Ladak, and south of Yarcund and Cashgar."

The Thār, or Jemlah Goat.

Hemitragus Jemlaicus, (H. Smith.)

This animal differs from the true Goats in the peculiar form of its horns, which are very short and deeply notched in front, in having no beard, and in some other points of structure. It was first described by Col. Hamilton Smith, in 1827, in Griffiths' translation of Cuvier's 'Regne Animal,' and named by him *Capra Jemlahica*. Dr. Gray has since instituted the genus *Hemitragus*, proposed by Mr. Hodgson, and placed it at the head of his sub-tribe *Capreæ*. In Nepal it is known by the name of *Jharal;* in Cachmere, according to Mr. Vigne and Dr. Adams, it is called *Krás*. The latter gentleman informs me that it is abundant on the banks of the river Chenub, Kistuar, near Cachmere; that the female, whose horns are small,

has no mane; and that the kids are white, with a black stripe down the back.

Capt. Smyth adds the following:—

"The Thār is found at an elevation of from 8,000 or 9,000 feet in winter, to 15,000 feet in summer. Thār stalking affords, I think, the best sport (certainly the most dangerous) in the Himalayahs. They are found on the face of the most frightfully precipitous ground, and it requires a good head and steady nerve to pursue them with any chance of success. The males are about three times the size of the females, and except in the rutting season (from beginning of October to middle of November) herd separately. From May to October the males are very difficult to find. As the snow melts on the heights, and the grass springs up, their grazing ground becomes more and more extended, until in August and September they are sometimes found as high as 15,000 feet. The females keep more together in the lower ground, and are seldom seen so high as 10,000 feet, so that with very little trouble, comparatively, one can get a good day's sport among them. I have known many Himalayah sportsmen who have killed heaps of Goral, Kakur (Barking Deer), Bears, &c., the summit of whose ambition was to kill one large male Thār.

"Between May and October the males only feed very early in the morning and at sunset; during the day they lie down in out-of-the-way places, and are very difficult to find, so that I have frequently been out after them in those months without seeing any. The one and two year old males herd with the females the whole year round. Towards the end of September a few females are often seen in the high grounds with the male Thār, these they entice down to the low grounds. This is the time to shoot the males. They are now in the best condition, very fat, and their coats beautifully black and glossy.

"During the rutting season the males are always fighting, and numbers of them are killed by falling down the crags. I have frequently come across their remains. An old Thār is a really fine animal, and one does feel a great deal of satisfaction in knocking one over; but no one should go after them who has not full confidence in his own powers of climbing, and the steadiness of his head. The ground is something frightful. I always used to take off my shoes; afterwards, to save my feet from thorns and rocks, I used to bind a lot of old cloth, &c., round my feet, and a network of string round all, tied tight about the instep and ankles. This I found most useful in climbing. A long rope is indispensable to let one another down, or haul one another up places otherwise impassable, so that two or three people should always go together. The natives are so fond of the flesh of a male Thār, that I have occasionally seen them rip open one I had just shot, and devour the liver, fat, &c., raw. I have eaten it cooked in various ways, but the flesh is too strong tasted to be agreeable. I do not know the weight exactly of a large Thār, but I remember the largest one I ever shot was in October. He was lying on the edge of a rock, on the face of an awful precipice. By taking off shoes and stockings I climbed down the precipice, to within about one hundred yards of him, and straight above

him; and my bullet broke his spine, close to the neck. He was paralysed, and could only move his head. This was fortunate, as if he had struggled he must have tumbled down this precipice, and been smashed to pieces 2000 feet below. As I wanted to make a specimen of him, I sent for seven of my coolies (porters). We cut down a small tree, tied him to it, and attempted to move him out of his perilous position. With our united efforts (eight of us) we could only move him about two yards. After he was butchered, there were six heavy loads of his carcase to bring up to camp.

"At this season of the year they look, from a distance, like Black Bears, and are hardly smaller. In May, June, and July, before they get their new coat, they are of a rusty grey colour, and have a mangy appearance. They have long hair on the neck, almost like a mane. To make a good specimen, the best time to shoot one is towards the end of November. In October they are so fat it is impossible to get the fat out of the skin. Later in the winter the hair is thicker, but loses the gloss it has in October and November; and the long hair of the neck gets torn off by thorns and brambles. The female is in best condition, both for eating and to make a specimen of, in December.

"There is a smaller kind of Thār, (of which also I have a good specimen), inhabiting lower ranges, the males of which do not go up to the snow in summer, like the large males. Their origin is doubtless the same; and the difference of size is accountable from local causes, and the greater heat of the lower hills.

"A great many natives lose their lives in pursuit of the Thār, like the Chamois-hunters in Switzerland."

The Argali Sheep.

Caprovis Argali, (Pallas.)

This gigantic animal, better known as the *Ovis Ammon*, was placed by Linnæus with the Goats. Pallas subsequently proposed for it the genus *Ægoceros*, and the specific name of *Argali*. Dr. Gray has adopted the generic name of *Caprovis* of Hodgson, but he divides this into two sub-genera; *Musimon* for the Moufflon, &c., and *Argali* for the present species and the Big-horn of America, if really distinct. The hair of the Argali, like that of most rock-frequenting Ruminants, is short, harsh, nearly erect, waved and crisp, and attached to the skin by a very fine point. The color is chiefly pale brown, darker on the fore part of the limbs; the tail is white beneath, and there is more or less of white on the rump.

Dr. Gray, after carefully comparing specimens from the Himalayas, received from Mr. Hodgson, with others from Siberia, received through Russian naturalists, is unable to discover any points of difference, though

Mr. Hodgson says they are distinct. Dr. Gray agrees with Mr. Blyth in considering the North American species, termed the *Big-horn*, as probably identical with the Siberian.

Dr. Adams informs me that in Ladakh this species is called *Nâboo;* he was only on the borders of its range, but was told that it grazed the country in immense flocks in Chinese Tartary. Dr. Hooker speaks of flocks of fifty on the borders of Thibet, visited by him, where they are known under the name of *Gnow.* They were very seldom seen, and always at great elevations.

Captain Smyth's remarks are:—

"The *Ovis Ammon* of the Himalayahs is found in the country on the *North* slopes of those mountains, and on the low ranges of hills rising from the plains of Thibet; it is also sometimes, though rarely, seen on these level plains. These plains are at an elevation of from 14,000 to 15,000 feet above the sea, and the hills on which it is found rise 2,000 or 3,000 feet higher. It is a splendid animal; the ram, which stands about as high as a donkey, is very much if not the same animal as the *Ovis Argali* of the Rocky Mountains. The head of the ram, with the horns, will sometimes weigh as much as forty pounds. The shape and curve of the horn is exactly that of the domestic ram. The largest one I have shot measures in length, taking the outside of the curve, forty-one inches, and in circumference seventeen and a half inches. The female is much smaller than the ram, the horns are small and flat, eight or ten inches long, and generally curving outwards towards the points. Males and females herd separately, and as far as my experience goes, are seldom to be found any where near together. They are not numerous, and unless one has information of where they are to be found, a great deal of time will be wasted in looking for them. They haunt localities, males one place, females another, which are very far separate. They have seldom been shot by Englishmen, as their haunts are very far away in the interior of an inhospitable country. I do not think a full-grown ram was ever shot by a European in *this* country till about five or six years ago, (and very few have been killed since). Several females had been killed previously. Their feet are formed differently from the Burral's, and they cannot go into precipitous ground. I have always found them more difficult to stalk than any animal in the Himalayahs. The ground where they are found is so open, and they are so particularly wary and sensitive of smell, that I have been out after them, day after day, without getting a shot, though seeing some every day.

"*Ovis-Ammon* stalking is, I think, the most fatiguing work of all. To walk any distance on level ground at such an elevation is exertion enough; but walking up and down hill at an elevation of from 15,000 to 17,000 feet, is killing work for a man not in first-rate condition. Unlike most other wild animals, they do not seem to care about being near water; while the grass is green, (*i. e.*, until September, when it begins to be bitten by severe

frosts), they only drink once in four or five days, and one is as likely to come across them ten or twelve miles away from the nearest water as anywhere. I once camped about a mile away from the only water in a neighbourhood where I knew *Oves Ammon* were, thinking it likely I might come across them as they came to drink, but I never met them near the water, though I often saw them four or five miles away from it. In 1852 I wasted about a month in looking for *Oves Ammon* in a country I knew very little about, though I knew they were to be found there, and during all that time I only saw one small flock. I had no person with me who knew their haunts, and I would strongly dissuade any other sportsman from following my example. He may, of course, stumble upon them, but the chances are he would be as unfortunate as I was then. In 1853, profiting by experience, I took two men with me, who knew most of the *Ammon* ground in this country of 'Hoondes,' and was very fortunate in consequence, bagging nine of them. It is evident that the rams frequent different places at different seasons of the year. In winter, numbers of them die; in some places I have come across a great many skulls and carcases of them, where I have never seen the animals themselves. I have seldom found the carcases of the females. The ram *Ammon* is a splendid animal, and I know nothing so exciting as *Ammon* stalking, chiefly on account of the difficulty of meeting with success. The skin and hair of the *Ovis Ammon* is very much like that of the Burral, and they, as well as the Burral, and all animals (wild and domestic) of this elevated country, are provided with a fleece of fine 'pushm' wool, as a protection against the severe cold."

The Burrhel Sheep.

Pseudois Nahoor, Hodgson. *Ovis Burrhel*, Blyth.

The Burrhel Sheep was first described as such by Mr. Blyth, in 1840, from a specimen in the Museum of the Zoological Society of London, shot in the great snowy range near the Burenda Pass (lat. 31° 23'; long. 78° 12'), at an elevation of from 15,000 to 17,000 feet, by Thos. Smith, Esq., 15th Native Infantry. Mr. Blyth believed its smaller size and smoother and darker horns to prove it undoubtedly distinct from the *Ovis Nahoor*, several years previously described by Mr. Hodgson as inhabiting Nepal. Mr. Hodgson, however, subsequently claimed the Burrhel as no other than his Nahoor, the common name by which it is known to the Nepalese. On this question Capt. Smyth says, "I have seen an immense number of Burral in my time, and have several times shot two out of the same flock differing in size, color, and shape of horns considerably, and I do not see any necessity for making two species of them."

The Burrhel is distinguished from the true sheep by the want of the crumen or eye-pits on the front of the face; by rounded uncom-

pressed smooth horns, directed upwards and backwards, with great divergency, forming nearly right angles with the axis of the skull, having the points bent inwards, and by the short deer-like tail. They gestate five and a half months, and lamb in summer.

The Burrhel presented by Capt. Smyth stands about two feet ten inches high at the shoulder, measures four feet ten inches from the nose to the root of the tail; the horns measure round the curve one foot ten inches, and have a circumference at the base of eleven inches. The general colour on the body and outside of the limbs is pale ashy brown; the face, chest, and front of the legs variegated with dark brown; the cheeks, throat, inside of the ears, the belly, the back of the legs and the tail beneath are white; a brown line runs along the flanks, separating the pale brown above from the white of the under parts. The horns are pale blackish brown, the hair short, thick, close, and of even length over the whole animal.

The following are Captain Smyth's remarks:—

"The female is about the size of a Leicestershire sheep. The ram (much larger than the sheep) has horns measuring on the outside of the curve about eighteen inches, circumference in thickest part twelve inches. The horns of the *sheep* are flat and short, six or seven inches long, differing in shape and size in different animals, but generally rising straight up from the head. The colour of these animals varies at different seasons of the year. In winter their coat is of a glossy black. They lose their winter coat at the end of June. In April and May it is a greyish colour. The hair, three or four inches in length, is quilly and brittle, underneath which they have a fleece of very fine 'pushm,' or shawl-wool. The mountains they inhabit are almost inaccessible in winter on account of snow and cold, so that very few specimens of them, in their winter-coat, have been brought down. These beautiful animals are found very far in the interior of the Himalayas, in the heart of the snowy ranges, and are only met with in the grass lands far above the forest limit. Although this ground is much more open than the ground where the Thār is found, yet the Burral are seldom seen, even while feeding, very far from precipitous ground, where they retreat when alarmed.

"April, May, and June are the best months for shooting them, *i.e.*, a sportsman is more likely to make a good bag in those months; as, on account of the depth of snow at that time in the higher regions, and the scarcity of grass, the ground they are to be found on is limited. They are, however, thin and in bad condition then, and the females in young. In June they begin to lose their winter coats, and the skins are not worth preserving. In July and August they have a very mangy appearance. In August they begin to get fat, and in September and October they are in capital condition for eating, and the flesh is excellent. At that time, however, they are difficult to find; the snow

having melted, and the young grass grown on such an immense extent of ground, that the Burral are scattered, and they are at that time only found on foot in early morning and evening, as with an hour or two's feeding they get quite sufficient grass. In the early part of the season they are on foot nearly the whole day, on account of the limited supply of grass, and have to wander about from place to place in search of it. They are very fond of the yellow Gorse flowers in April and May. In fact they get very little else at that time of the year.

"The male and female generally herd separately, though they are sometimes seen in company. The young males of one year old are always with the females. The rutting season is November, and the lambs are born in May and June, one or two lambs at a birth. Very few instances, if any, of a young lamb having been caught are known, so, it is supposed, they drop their lambs in the most inaccessible places, and that the lambs get the use of their legs almost immediately.

"Burral and Thār shooting are each in their way the perfection of stalking. Thār shooting requires steadiness of head and good climbing; but Burral shooting requires great power of endurance. From the great elevation of Burral ground, the exertion and fatigue of walking up hill is far greater than in Thār ground; and a person to be successful must be in strong health. These Burral are the wildest possible animals, and require the greatest care and judgment to stalk. A good telescope is most requisite. It is absolutely necessary to discover a flock before they have seen you, which, without a telescope, is very difficult, for their senses of sight and smell are most keen. You generally discover the Burral with the aid of a telescope at a long distance, from one to two or more miles. You ought then to sit or lie down and arrange your stalk. If while stalking them you see they have become alarmed, which sometimes happens without their having seen you, you may at once give up the chase, as there is not the most remote chance of your getting a shot. When alarmed in this way, they get up one by one in the most deliberate manner, perhaps begin to scratch or stretch themselves, and walk away so quietly that a novice in Burral shooting thinks they have not seen or smelt him, and will follow them up. The Burral walk quietly away, but much faster than the sportsman can walk, for miles and miles, till at last, as if thinking they have made quite a sufficient fool of him, they will gallop off for miles further, until they become lost to view amidst the eternal snows and glaciers.

"Burral are, however, sometimes stupid animals. It occasionally happens that after a very successful stalk, or accidentally, you come upon a flock suddenly, within seventy or eighty yards distance; they are then just as slow and deliberate in their movements as if you were half a mile from them. You may fire all your barrels, and sometimes have time to load again, before they are all out of shot. One day I had only a single rifle with me, and I came upon a flock of rams in this way by a judicious stalk. I fired, and had time to load twice and fire two more shots before they were out of range. I got two of them. About an hour afterwards, on reaching the ridge of a hill, I accidentally stumbled upon another flock that was feeding behind the ridge, and did precisely the same. I got three shots, and

bagged one of them; another, that I wounded, unfortunately got away.

"Burral are found on both sides of the snowy ranges of the Himalayas, and all over Thibet and Hoondes. I think this must have been the country they originally came from. This country, however, is in most places flat and open, and I have said before that Burral, although they feed on flat open ground, are seldom far away from some precipitous ground, to which they retreat on being alarmed. Wherever such ground is met with in that country, there are certain to be Burral. They are precisely the same animals as the Burral of our side of the Himalayas. On the South side of the Himalayas the Burral have an enemy in the Snow Leopard (indeed, these two are the only animals found on the South side, between 12,000 and 16,000 feet elevation), and on the North side the Chauko or Thibet Wolf kills a great many of them. It is hard to conceive what they live on in winter. They never go lower than the limit of forest, which, in the Himalayas, is about 11,500 feet. They must live on the grass that springs up in summer on the faces of precipitous ground, too steep for the snow in winter to lodge upon. A great many are swept away by avalanches. I have often discovered their remains buried in snow. The snow, of course, preserves them, and I remember once eating a Burral in the month of June, which, I judged from its coat, must have been buried by an avalanche in December.

"In stalking Burral one should be very careful not to expose himself. They are very sharp sighted, and if once a Burral sees a man, at whatever distance, it may be two or three miles, he is off at once, and there is no chance of getting a shot at him. In stalking a Burral, one should continually look round to see that there are no *other* Burral in sight in any other direction, as, on being suddenly alarmed by the appearance or smell of a man, a Burral will start up, utter that shrill double whistle they invariably give on being alarmed, and will not only go away himself, but every Burral within hearing (within a circuit of a mile or two,) will move off immediately. I have frequently lost my shot in this way, or by putting up a Ptarmigan, or a Snow Pheasant, which, on being flushed, screams as if the world were coming to an end, and always frightens away all the Burral in the neighbourhood. In stalking Burral, if I see any of these birds, I always make a detour to get out of their way. If in stalking *one* flock of Burral, another flock or a single Burral is seen in another direction, it is often advisable to leave the first, and go after the latter; but this must be determined by the nature of the ground."

THE CASTLE HILL OF PENWORTHAM.

By the Rev. W. Thornber, A.B., Trin. Coll., Oxon.*

(Read 1st January, 1857.)

Antiquity, tradition and history, combined with nature's gifts, have lavished upon Penwortham much renown, and surrounded its heights with a halo of interest and beauty, that have rendered them almost classical. The grandeur of its locality, its towering eminence, the noble winding stream of the Ribble at its base, the woods which embosom it and toft the verdant dale which it overlooks, are worthy of the historian's pen and the painter's pencil. The Britons admired it as the green hill on the waters; the Roman sentinel from its summit hailed the laden galley on its way to Coccium; the Saxon thane there flew his hawk at its quarry, there speared the wild boar and feasted on it with his retainers; the Norman baron held his "king's court" on Castle hill; the priest and his penitent told their beads and pattered their prayers at the shrine of its priory; and the pedestrian in search of the picturesque, whilst ascending its steep brow, or resting himself on the steps of St. Mary's well, has listened with delight, or a moistened eye, to the melodious chimes of the sweet bells of Penwortham church. These associations will receive additional lustre by our society's "find" of last year,† if in my enthusiasm I make not the mistake of breaking a lance against a windmill instead of a giant.

Castle hill is situated on the north eastern spur of the heights of Penwortham, having in front a level area of some size; whilst on the south it is separated by a deep gulley from the back of the church. In former times, the stream of the Ribble washed on two sides the base of the cliff from which it rises, and on the west a sunken road ran between the baronial fortalice of the Bussels and the priory of St. Mary's, down to the old ferry over the river; so that the one might obstruct the passage of an enemy and the other remind a friend of the duty of prayer on the outset of a journey. Tradition loves to gossip concerning this spot. The tale,

* Aided by the notes and illustrations of Mr. C. Hardwick, of Preston.

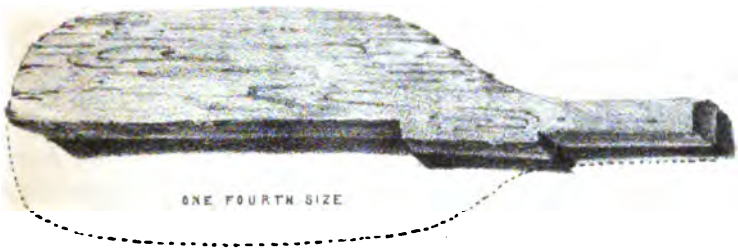
† The hill was examined on the 24th of June, 1856, during the Excursion of the Historic Society; also on the 23rd and 25th. See Transactions vol. viii. p. 256.

however, most stoutly persisted in is, that from the vicinity of Castle hill, or from the priory, there existed a subterranean passage, which communicated with the hospital at Tulketh on the opposite bank of the Ribble. Veritable as this tradition is deemed, I paid little regard to it, when together with other members of our society I visited Penwortham hill; but busied myself in ascertaining that the mound, which the workmen were excavating, rose about eighteen feet above the level of the churchyard, and from sixty-five to seventy-five feet above the base of the water-worn cliff on the east. Its circumference is two hundred and twenty yards, and was probably more, previous to its diminution by the undermining action of the stream. As you ascend the summit, you cross several circular terraces from each of which spring mamelon mounds, that become gradually less. As a whole it resembles the conical beacon hills on Sussex downs, though like them Castle hill has never been circumvallated.

The profile of the hill and horizontal plan of the excavations, fig. 4 and 5, plate iii, will aid my description. A trench being opened from A and H at the north east side of the mound was extended at the depth of eleven feet to C; then after an interval of space between C and D a shaft was sunk at D. These cuttings pierced through a mass of mixed red sand and marl, and a thin layer of black viscous matter formed of decayed vegetation, about six feet above the more important remains. At the first sight, I was disposed to think that the hill was of a geological and not of an artificial formation. A little closer observation, however, manifested the fallacy of my hasty conjecture. The deposits were not so dense, or close as a natural structure of earth would present; but they were altogether destitute of that compact texture of marl, which we afterwards found beneath the pavement soon to be referred to. Our discoveries commenced at the bottom of shaft D., for we here exhumed a singular piece of workmanship, composed of hazel wands, cross pieces, and rafters. The principal portion of these had been used in their natural, undressed, green state, and constructed and at times interlaced with great care and nicety. The wands were somewhat thicker than one's thumb;* in one place laid perpendicularly, and very closely side by side, in another,—and here the roof had been thatched,—at short, but regular intervals; in a third, they were wattled. These wands rested on horizontal cross pieces, which in return were sup-

* One of these may have been the remains of the outer wall:—specimens of each are preserved.

FIG 1.



ONE FOURTH SIZE

FIG 2

FULL SIZE

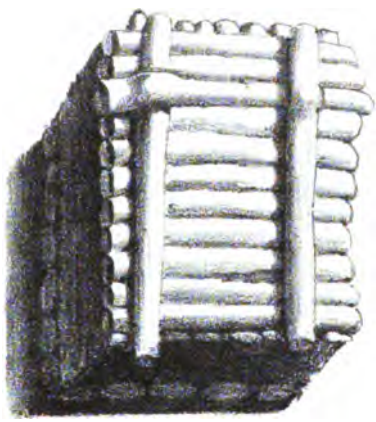


FIG 3.

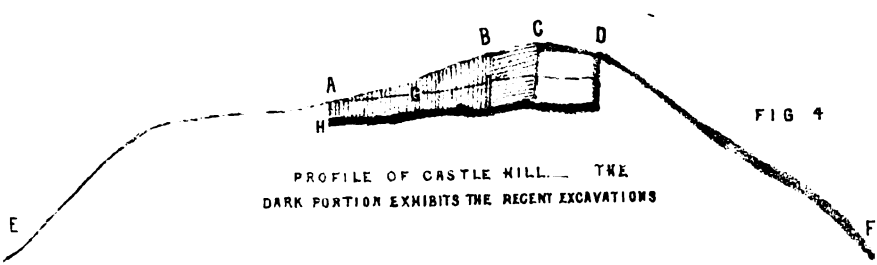
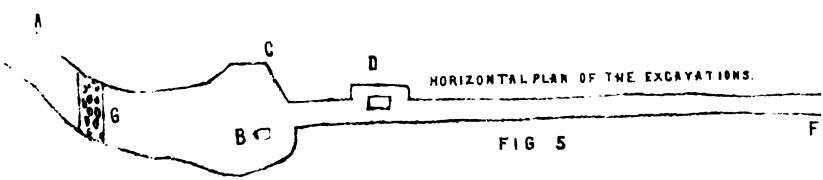


FIG 4

PROFILE OF CASTLE HILL.— THE DARK PORTION EXHIBITS THE RECENT EXCAVATIONS



HORIZONTAL PLAN OF THE EXCAVATIONS.

FIG 5

REMAINS FOUND IN THE "CASTLE HILL"
PENWORTHAM

ported by thicker rafters, that appeared to have run from the plate of the building to what is now called the ridge. All these wands, cross-pieces and rafters, except those which had been hewn and in previous use, as well as the interlacing binders, retained the silvery hue of their bark, and not only were the slender wands of the roof moulded by pressure from above round the cross pieces; but the rafters in a similar manner had formed matrices in the wood, which they sustained. All were black with age, decay and smoke, and many exhibited undoubted proofs of having been portions of a more ancient and substantial building.

I will not undertake to determine whether all the roof had been thatched: I think not, certainly in some parts we found no signs; but in others, both from above and beneath the timber, was removed a strewment of rushes and grass of various kinds, especially the *Rumex acetosa* in seed, and which, I observed, grew at the time of our visit, most profusely around the hill and on its summit. Beneath these lay a festering mass of debris to the thickness of two feet six inches, which concealed a rude and uneven pavement of river boulders. These were embedded in a greyish kind of earth, that doubtless had once been surface soil; but it was not easily recognised at first on account of its being saturated with animal matter and thickly maculated with white spots, which on exposure to the air quickly turned blue. This effect is produced, Mr. Hardwick says, by *Vivianite* composed of the phosphate of lime from bones in contact with iron. Such was the case here, this chemical compound being formed from the ossiferous remains and metal instruments, buried in the debris, their fluid matter had percolated through the pavement into the substance beneath. Besides, the preservation of the articles discovered lying on the pavement, must be ascribed to the same cause. Time had but little corroded the iron.

The outer walls of this antique ruin were most probably constructed after the manner of the roof, by strong poles planted side by side, by wattling, or by "raddle and daub"; but, that the building had consisted of more than one apartment seems probable from the different methods of roofing adopted, and a perceptible variation in the height of the pavement. The main portion, however, appeared to have been circular, from the fact of broken stumps of uprights taking that form; and these uprights had been sharpened by a keen small axe, evidently not a bronze one. The pavement of the interior was disclosed at the bottom of shaft D, in figures 4 and 5, plate iii; but the whole of it

was not exhumed;—only thirteen yards in length by six broad. Nor were any signs of the margin met with at any point, except the north; whilst the circumference of the hill, where the paved floor of boulders rested, could not be less than one hundred and forty yards. Thus we can merely guess at the size of the whole building, though there may also have been a stockade round the outer rim of the summit, now totally decayed. The method of supporting the roof of the principal apartment at least, may be conjectured with greater certainty. At B in figures 4 and 5, plate iii, there remained fixed in the ground a rude, heavy, and partially squared oak post, which had been broken off five feet from the floor, and bored with three holes for the insortion of pegs. This, perhaps, was the centre pillar, the main support of the roof; but to what use the solid, broken planks that lay on the pavement on the north east and south west sides had been converted, it is difficult to determine. I will only record, that one of them was pressed upon two strong rafters and crosspieces, and that both had been riven and not cut by the saw; since their knots had been torn from their sockets. They may have been a portion of the outer wall, or roof of the building, as the holes through them and the foot length pegs found near, would seem to testify. One thing is certain, the age so visibly stamped on them, and the centre pillar, proclaims that they have witnessed many a restoration of such a fragile building as the one from which they were disinterred.

The question now occurs, who were the occupants of this dwelling on Castle hill; when was it destroyed; and who elevated the mound to its present height and formed its conical shape? To these questions we may perhaps obtain an answer by a near inspection of the bones, instruments, and even the building itself, out of the ruins of which they were exhumed.

In the early period of our island's history, dense forests covered the face of the whole country. The Doomsday survey records that in the Confessor's reign the adjacent parish of Leyland contained woods eight miles in length by four and a quarter broad, and that Penwortham also, after the conquest, was not destitute of one. And these were well stocked with game of every kind; nor during the Saxon period was the owner of the land restricted from free warren over his property. At a distant period the huge-horned *Bos primigenius*,—was it the *Urus* of Cæsar?—roamed through their thickets and glades together with the *Bos latifrons* and *longifrons*, whose skulls, teeth and horns are still dragged from the Ribble,

and those of the latter exhumed from the Roman camps at Kirkham and Walton. Moreover, herds of bucks, bevies of roes and red deer (*Cervus Elaphus*,) sounders of wild swine and singulars of boars were very numerous, as well as land and water fowl, which were captured by snares and by hawking with birds from the neighbouring aeries; sports with that of hunting with the hound and horn, so highly esteemed by the Saxon nobility, that it was an essential branch of education and the business of life, except when the nobler game of war engrossed their attention.

The bones of the animals, discovered amid the ruins of the dwelling on Castle hill, all belonged to those which are given for food to man; yet as they existed from the earliest period to the mediæval ages in Britain, no inference can be drawn from them of the date of its erection, or the time when the hunters feasted on their flesh. The *Cervus Elaphus* is indigenious. Professor Owen says—"The oldest stratum in Britain yielding evidence of a *Cervus* of the size of the red-deer is the red-crag of Newbourne." A more specific character, however, of this sized deer is afforded by antlers, as well as teeth and bones, and these attest the existence of the *Cervus Elaphus* through intermediate formations, as the newest fresh water pliocene and the mammoth silt of the ossiferous caves, to the growth of existing turbaries and peat bogs. Camden speaks of them as roaming wild in his time among the Hellbecks of Richmondshire. Pies of the wild boar, red deer, and cow, slain in the woods of Hoghton Tower, feasted king James on his visit there. Nor are they yet extinct. They exist in the Highlands of Scotland, in Windsor park, and even at Knowsley.

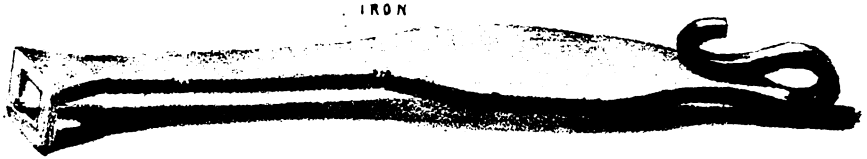
Neither was the wild Boar totally eradicated from our thickets, in which it had sought shelter from the earliest times, until the mediæval ages. An inscription on a Roman altar records "That it was not possible to destroy it on account of the density of the woods." Whittaker of Manchester relates—"How the wild boar roved over the woods in that parish during many centuries after the Romans had departed, that it gave the name of Barlow or Boar's ground to a track in the south west of that parish, and that it retained its haunts in the wilds of Blakely within the last three or four ages." Fitzstephen in his history of London at the latter part of the tenth century, observes—"that Boars were among the wild animals, which frequented a forest, then surrounding the city." But, were the bones discovered those of wild, or domestic swine? The snout of the former was longer than that of the latter and the tusk

sometimes nearly a foot in length. The largest tusk, however, taken from a jaw found at Castle hill did not altogether exceed five inches.

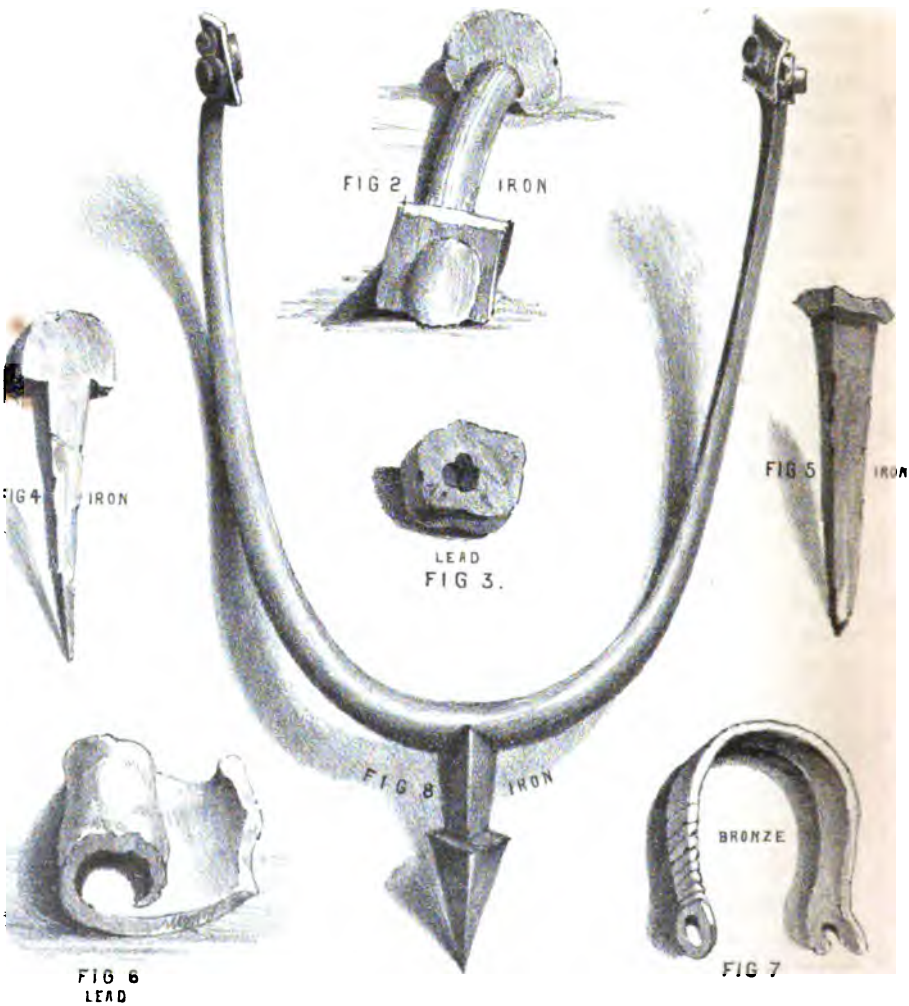
Thus the remains of the red-deer and of the boar, as well as those of the other animals exhumed with them, indicate no specific time when they had been buried. We must resort to more unerring tests, if we would discover the occupants of the edifice on Castle hill; and we may perhaps learn their names by an examination of the structure of the dwelling and the various instruments preserved in its ruins. As on the north bank of the Ribble, so on the south, British remains are not uncommonly met with. On the draining of Martin Mere, seven canoes were disclosed, all formed from the trunks of trees by fire and the axe. They were different from, as well as older than, the two skin and wicker coracles of the Fylde Marton Mere. I say older; because the Britons had not then attained such skill in the weaving of baskets, as to enrich the language of Rome with the term "bascauda." A bronze celt was likewise discovered in the vicinity of these canoes, which Dr. Leigh pronounces to be,—"one of the greatest relics in the universe;" nor will we criticise his enthusiasm after seeing a representation of one of Nimrod's sappers and miners making use of a similar weapon or tool, against the fortifications of a walled city. But British remains can be appealed to much nearer to the scene of our history; for Mr. Hardwick affirms, that they exist beneath the Roman debris at Walton. Nay, the old name of Penwortham is of British origin, thus,—Peneverdant is formed of three words—pen, werd or werid and want, as Caer werid, the green city (Lancaster) and Derwent, the water, that is the green hill on the water. Such being the case, we may not unreasonably expect traces of our Celtic ancestors at Castle hill. Let us bring to the test the discoveries made there.

It is difficult to write correctly about the dwellings of any ancient people; so very perishable are the materials with which they were constructed. Their tombs are the best memorials of their existence and the preservers of their domestic utensils; since the dwellings of the dead have proved more permanent than those appropriated to the living. The Britons in summer occupied the summits of circumvallated hills, which the Welsh call "Caers" and the Gauls "Duns." Cæsar records,—"What the Britons name a town is a tract of woody country surrounded by a vallum and a ditch." Strabo corroborates Cæsar, and Diodorus Siculus tells us what the houses were. "The dwellings of the ancient Britons

FIG 1
IRON



ALL FULL SIZE



METAL ARTICLES FOUND IN THE "CASTLE HILL",
PENWORTHAM.

were wretched cottages of a circular form with a tapering roof covered with straw, at the top of which was an aperture for the smoke to escape: the walls were wattled and the chinks filled with clay to exclude the cold." Such were the better kind of "tuguria;" but the huts of the humblest were little better than the holes of foxes. The ancient abode on Castle hill seems to have some little resemblance to the above description; yet there always is a similitude in the efforts of any people, climbing the first step of civilization. Castle hill, however, was never circumvallated, according to my judgment; nor was the erection of the dwelling a first effort; as its extensiveness, the ingenuity displayed on the roof, the use of an iron axe and a borer, &c. clearly demonstrate. Neither had it possessed a tapering roof after the fashion of a child's rush cap, or like the British *cab* lately disclosed beneath Pilling moss by the Rev. J. D. Banister, where the trench in the clay proved its circular shape, and the long alder poles lying near, amidst huge trunks of charred oak trees, proved the use for which they had been prepared—the formation of outer walls and a conical roof. Besides, the articles pronounced by some to be of British construction are of very doubtful origin. The hand paddle, fig. 1. pl. iii. found near A on the outside of the ruins, is assuredly such a one as might have belonged to a primitive race. The blade is broken on one side; but restored like the other, it is very similar to those with which the islanders of the Pacific handle their light canoes. If you assert that it was the paddle to some fishing coracle, you create an argument against its ever having had a Celtic owner; because Xiphilimus relates—"that the Britons never taste fish." Yet that such was its use is probable from mussel shells being buried at the same depth in the debris, as well as two net weights,—the pieces of lead, fig. 3 and 6, pl. iv. the one round with a hole in it and the other rolled up; unless, together with a pierced upper part of the head of a red-deer's thigh, or shoulder bone, you aver, that they have been amulets. Besides the presence of goose, hare, and rabbit remains, with these articles, militates against the assertion; for the flesh of the two former was eschewed as food, and the latter was introduced by the Roman conquerors of Britain. We must look therefore elsewhere for the occupants of the dwelling on Castle hill.

Dr. Kuerdon with much ingenuity attempted to fix a Roman station at Preston; but his learning was of no avail, because he was unable to produce a single Roman vestige that had been found within its precincts.

He was aware, that there must be a castrum somewhere not far distant; but although ever since his day many antiquaries have hunted about for the identical spot, it was the fortune of Mr. Hardwick to earn the crown, worthy to adorn the brow of such a discoverer. He has proved Walton to be the site of Coccium, so earnestly sought for, by the production of coins, fibulæ, pottery, &c., which he had there collected. And the agger, that branches from it southward, abounds with memorials of Roman occupancy on both sides. In Leyland, many discoveries have been made,—a gold finger ring with S. P. Q. R. marked upon it,—also four brass ones interlaced like a chain, and twenty-eight coins in its moss. Nor has the adjacent country been less prolific. At Worden there were found in 1850 no less than one hundred and twenty six coins; at Euxton a coin of Cæsar; at Whittle a numerous treasure of copper denarii; and towards the end of the seventeenth century an urceolus, which contained two hundred others, from fifty different dies, and two gold rings of the Equites Aurati. All these "finds" were made to the east of Penwortham, but not one, if I am rightly informed, in its immediate neighbourhood, or on its heights; for I conceive, that the pavement of boulders discovered by Mr. Marshall of Penwortham Lodge can have been nothing more, from its narrowness, than an ancient bridle path, very common throughout the country. Still on such a position an antiquary would expect to find some signs of an outpost, or at least an outlook, whence a view of Walton to the east and Kirkham to the west might be obtained, as well as a command of the Ribble and its ford. And such an opportunity seems not to have been neglected. The nail, fig 4, plate iv. with its flat, oval-shaped head, which was taken from the ruins at Castle hill is similar, or nearly so, to one discovered at Walton by Mr. Hardwick. The other also, fig. 5, is supposed to be Roman, and the iron rivet, Fig. 2, is in every respect the counterpart of that etched by Roach Smith as found at Settle. The instrument fig. 1, is an article of great rarity. Mr. Franks of the British Museum showed to Mr. Hardwick a paper by the Hon. R. C. Neville in the Archæological Journal of March, 1856, where several such are figured and described as having lately been discovered at Chesterford in Essex. It is pronounced to be a late Roman key. The make of it is significant:—the hoop attached it to the belt, or chatelaine; the spattle beneath gave support to the forefinger and thumb, when in use; and the square loop at the end acted as the barrel of a modern key upon the fulcrum of the lock. Here

then is interesting matter for contemplation. These Roman remains of iron give some solidity to an assumption only feebly maintained before, that the legionaries of Coccium may have planted an outpost, or outlook on Castle hill. The tale too of the subterranean passage also beneath the river is accounted for: the truth is extracted out of the mist of ages. The interchange of communication between the Roman sentinels on Castle hill and Tulketh speculæ, and afterwards by the ford and Norman * ferry here, originated this wide spread tradition.

The light of history now begins to dawn upon us. Preston, after the fall of the enfeebled Roman provincials, had risen on the ruins of Coccium, which city, although,—as Lappenberg says,—it had the right of Latium, yet bequeathed nothing of its ancient glory to the founders of the "tun" and "ham," except its Breton laws, which governed the whole of Amounderness to the reign of the first Edward. Alchfrid also had granted his lands, near the Ribble, to Eata, the Culdee; but had soon afterwards revoked his gift in favour of Wilfrid; and the ships of the Angles and Vi-kings had floated past Penwortham to Walton and Cuerdale. The heights of Castle hill therefore could not have been overlooked. We read that its ancient British name had assumed a Saxon garb, and that both it and the neighbouring parish of Leyland were royal and superior manors in the time of the Confessor; nay, more, I trust to be able to shew that the ruins at Castle hill were those of the "aula regis," the "haia," or "ham," the German ein heim of that king's representative; in fact the palace of the parish, as well as its court house.

Tacitus in his account of the Germans, Teutonics like the Saxons, says "The Germans were accustomed to dig subterraneous caverns and then to cover them with much loose mould, forming a refuge from the winter storms." Hasted, the topographer of Kent, describes many such in the heaths, fields, and woods near Crayford. Even in Wallachia at this day, the gypsies scoop out a den in a sunny hill, cross some sticks over the roof and pass the winter there. Some such an abode, or one whose outer wall had been backed up and concealed with earth, I conceived that of Castle hill to have been.

However this may be, facts seem to demonstrate that the dwelling was a

* Mandate to the Escheator for land in Penwortham, seized for withdrawing of the service of a boat over the river Ribble. Anno 10mo Ducatus Hep. Lanc. The Roman trajectus was near Walton bridge.

structure of the Saxons; for they too built their houses with wood, as is evident from the use of the verb "timbrian," to express the act of building, and in the examples of Greenstead church we have their peculiar method. It is composed of the trunks of large oaks, split and roughly hewn: they are set upright and close to each other, being let into a sill at the bottom and a plate at the top, where they are fastened with wooden pins. The houses, which William of Malmesbury contrasts with the stately edifices afterwards erected by the Normans, were much inferior, being rudely constructed with piles. Bede describing the monastery built by St. Cuthbert remarks, "Within the walls he raised two houses and a chapel, together with a room for common uses. The roof was made of unhewn timber and thatched." And how can we expect them to be anything else than rude and mean, when they were the workmanship of the ceorls and slaves of the manor? In the adjoining parish of Leyland an easier tenure than usual was allowed,—"The freemen did not work as customary ad aulā regis," "they only made a haia in the wood"—a hay, or wicker fence enclosure for the protection of the houses and cattle stalls of the lord's neatherd, swineherd, &c. It cannot mean merely a "fence," for "stabuli turæ" are frequently in connection with it; and in the midst of the great common of Layton and Lytham Hawes, a small rural village is still called the Hag, or Hay houses, the ancient homes of the tenters and grazers of the cattle, belonging to the lord and freemen of the manor and Saxon mark.

But did the Confessor's representative at Penwortham occupy so fragile and mean a dwelling as the ruins of that on Castle hill manifest? Antiquaries record the existence of a castle during the supremacy of the Saxons. It is high time to demolish so palpable a mistake, as well as that the thane of all the surrounding parishes resided therein. The Doomsday survey itself will accomplish this. "Rex. E. tenuit *Peneverdant.* Ibi. ii. car. træ, 7 reddb. X. den. Modo. ē ibi castellū, &c." You perceive when it speaks of the Confessor's time, it is in the past tense; but of the Conqueror's in the present. The change is made after a similar manner almost through the whole survey, however translators may have mangled the original, or misunderstood the meaning of terms, "Modo ē ibi castellū," must signify, "of late, or just now there is a castle."

"But surely," I hear you exclaim, "a great king's representative, resident in a superior manor, like that of Penwortham, would not issue his laws and regulations from a thatched hut of wicker work, little better than

a dog kennel? Look at king's palaces. Alfred invented the horn lantern to protect his candles, by which he marked the progress of time, from the blasts of wind that blew through the crannies of his dwelling and swealed the wax. The address delivered to Edwin, king of Northumbria, on his reception of Christianity exhibits a similar picture. The state of man is compared to the entrance and departure of a swallow. Behold the king and his suite seated round the fire in the midst of the apartment, whence the smoke escaped as best it might, and yet all so open that a bird had free inlet and outlet during the storm.

But I must proceed to investigate other marks of Anglo-Saxon residence on Castle hill, and they shall be tested by the food on which its occupiers mainly subsisted. The Saxons were a gross people; great drinkers, and vigorous feeders. Quantity more than quality was the object of their solicitude. Edmund and Hardicanute were types of the nation. The first was assassinated at his table, when his nobles and servants were too drunk to defend him, and the other, after a life of gluttony, died of an over-abundant dinner. Now it may be fairly assumed that the banqueters were Saxons, from the very great number of the jaws and other bones of the boar we picked up, both within and without the edifice. These were vastly predominant over the ossiferous remains of other animals. Pork was the usual food on which this people battened: they even believed, that they should not be deprived of it in another world, so dearly they prized it: nay that their here gods daily feasted on the famous boar, which was revivified for their pleasure, only to be killed and devoured again Next to pork they loved to feed upon eels. And both were plentiful: the fruit of the oak and beech fattened the one, whilst the *river supplied the other abundantly; especially after St. Wilfred had instructed his people of Preston and Fishwick, as he did those of Rippon, in a better mode of fishing. Pork and eels, however, did not alone satisfy the appetite of the chief of the hill; the bones of the red-deer, the long and broad faced ox, of the hare, fowls, &c., were pretty numerous, though by no means so much so, as those of the boar and more especially of their jaws. Singular enough none of the goat, or sheep were met with: they, by the Saxons, were chiefly prized for their wool; whilst the Normans dined on mutton: indeed the new nomenclature imposed upon articles of diet is significant.

* Penwortham had half a fishery at the Domesday Survey.

The cow, the calf, the deer, the fowl, &c., whilst feeding and rearing, retained their Saxon names, but on the table they became beef, veal, venison, pullet; yet bacon remained unaltered, as if the conquerors were too proud and dainty to meddle with such fare, therefore had left it untouched, as only fitted for a vanquished Saxon.

The chief of the hill also exhibited another trait of his nation: his habits were not over cleanly, he paid no regard to the sweeping of his dining room floor. Think of two feet six inches depth of festering matter in the apartment, where you ate and slept. The thane gnawed a bone and cast it on the carpet of rushes that covered the pavement, and his guest and retainer threw their morsels on the heap near them. One of their archbishops was brained by the Danes after dinner with weapons hastily snatched from such collections. Our mediæval ancestors however, had not learned much nicer habits of cleanliness. Erasmus complains of the sluttishness of his times,—"Beneath the rushes, strewed on the floor, lay unmolested an ancient collection of beer, grease, fragments, bones, spittle, excrements of dogs and cats, and everything nasty." "A hall, a hall" was the summons for the rake and broom to clear a space for the dancers, and the nobleman was often compelled to seek another residence until the lately occupied one was sweetened; whilst the prudent cry of—"'Haud your honde" and "Who wants me?" was nightly heard in the streets.

The presence of such an extraordinary quantity of swine bones seems to prove the occupants of Castle hill to have been Saxons, and their intermixture with the remains of other beasts of the chase, loudly proclaim, that the severe forest laws of the Norman had not been introduced, when the dwelling was tenanted. Let me now examine whether any of the articles discovered corroborate my assumption. Some of them, I cannot appropriate, such as the hazel loop, fig. 2, pl. iii, a few finely polished stones, and that curious bright bronze instrument figured 7 in pl. iv. You perceive it is ribbed on one side, as if for ornament, and takes a *v* like shape, the bends at the top being each drilled with a hole to insert a pin. Judges pronounce these to be Saxon; but I must hesitate, since I cannot recognise their use. The hand paddle, figured in plate iii, I will, however, declare to be so, as well as most probably the leaden weights and bone amulet, the sole of a shoe with a piece of the welt neatly attached to it, the half of a knife haft with the marks of more than one instrument upon it and made of

a red deer's bone, as well as a foreign madrepore, which may have been venerated as an amulet. Nor need we wonder how the Saxons became possessed of such a one; when Alfred's sailors, Octher and Wulstan, had made voyages of discovery towards the Arctic Circle; his priest Sigelin relieved, as we are told, the distressed Christians of St. Thomas in the East Indies, and the Danes had carried Cufic coins up the Ribble to Cuerdale.

Such are the proofs of Anglo-Saxon residence at Penwortham, and so satisfactory are they to my mind, that I should have pronounced the ruins wholly so; could I believe that the Roman remains discovered there had been fonnd and brought from Walton, or that more would not have been exhumed by further excavations. I never hoped for the production of many Roman coins; for the sentinel of an outlook would not have his purse overstocked with denarii, nor yet of many Saxon valuables; because on the first approach of his Norman successor, the thane would flee with them into the recesses of the surrounding woods, or if seized unawares, his dwelling would be plundered before it was consigned to destruction. This Ham, however, on Castle hill, whether the habitation of a single family or the "plurium conjunctiones," changed and corrupted the British name of Peneverdant into Penwortham, which name it still retains.

The question now arises, who destroyed the Ham and elevated and fashioned Castle hill to its present conical shape? Here is the book, which relates the whole history, if rightly read. The iron spur, figured 8 in plate iii, was taken from the ruins of Castle hill. It is of an elegant shape and workmanship, having the two rivets, that secured the strap, still sharply defined and free from corrosion. What, however, characterizes it is its spear-shaped spike. "The British Museum,"—says Mr. Hardwick, —"possesses no perfect specimen, nor any fragment that has been moulded with such symmetry of form." Whether this Penwortham "pryck spur" be of the late Saxon, or early Norman period is considered doubtful. Mr. Roach Smith referred my friend to his report on the excavations of the Roman Castrum of Lymne, where that antiquary seems to suppose they belonged to the former. It says,—"A penny of Eadgar found at the depth of two feet and also some iron prick spurs suggest, that the castrum may have been partially tenanted for some centuries after the Romans had abandoned it." Planche moreover records that they appear in the Saxon illuminations of the 8th to the 10th century. The Castle hill spur may

however be the work of a Norman operative, not only on account of its elegance; but for the following reasons. Planche whilst he states, how the "pryck spur" appears on the *Saxon illuminations and gives us an illustration; still tells us, that it retained its single goad during the reigns of Rufus, Henry I and II, to that of John. I have had no opportunity of examining these illuminations; but I wondered at finding the Cottonian representation of three royal personages on horseback without a spur, though depicting their costumes, as well as the harness and equipments of their steeds. Moreover, in the compartments of that historical memorial of the eventful period, which saw the Saxon dynasty swept from their possessions by adventurers from Normandy, I mean the Bayeux Tapestry, there are figured many horsemen, who wear the spear-headed spur. Harold on his way to Bosham with his hawk and hounds has his heel armed nearly in a similar way; but a needle like goad springs from a flattish globe. His followers, who accompany him, have none. On the other hand, in the selfsame worsted work, the Norman knights are as much recognised by the "pryck spur," as their shorn chin and lip. The Conqueror himself and the soldiers he is addressing on the field of Hastings, Toustain when carrying the consecrated banner, together with many other instances, might be referred to. The rowel spur is supposed to have been introduced between the years 1307 and 1327; yet the registrum Honoris de Richmond testifies to the contrary, if it is to be relied upon. There, on the occasion of William bestowing lands on his nephew, the Earl of Brittany, both himself on his throne, his knights standing behind, and the grantee upon his knees, display rowelled spurs of no common dimensions. Thus, if Mr. Amyot's defence of the Antiquity of the Bayeux Tapestry be conclusive, the prick spur was used by the Normans at Hastings; and their successors, even beyond the reign of the first Edward, imitated them, as many a royal and official seal can testify. They borrowed it not from the vanquished; though, since the marriage of Ethelred, "that fine sleeping figure of a king" with Emma, "the Flower of Normandy," and sister of its king, there had been much communication between the two nations. Let, however, the prick spur of Castle hill be of Saxon or Norman origin, either a hunter's, or a rad-knight's, it is immaterial to my history; except

* The Saxons it would appear used little cavalry; for it is said that the Earl of Hereford destroyed the efficiency of the Saxon troops by making them fight the Welsh on *horseback*, "against the custom of their country."

as a corroboration, that the ruins of the dwelling I have been attempting to describe, were not the home of a serf or ceorl, but of a knight. Still, Byron would have scouted the idea, that so elegant an instrument and one of such small girth could ever have been adapted for the heel of a splay-footed Saxon.

William had conquered at Hastings; but unmindful of the amnesty he had promised to the Saxon race, he harried them by his exactions, and the result was the great northern insurrections, which converted Amounderness into a desolation and laid "wasta" a portion of Leyland. To guard against such in future, he encouraged his barons to erect strongholds; so Roger de Poictou, in the interval between the conquest and the survey, built those of Lancaster and Liverpool, and probably a third at Penwortham on the Ribble; for no baron's name occurs in connection with it, before the defection of the superior lord; when it was granted by the Conqueror to a Bussel, the conjoint lord of the fief of Blackburnshire. The castle was ready for his reception, the Saxon Ham, after having afforded shelter, as the prick-spur manifests, to some knightly representative of the Saxon king, or visitor of the works, had disappeared at the time of the elevation of Castle hill; and the baronial residence of the Bussels is likewise now no more. Like the building that preceded it, its history will remain a blank, except some happy visit of a society, such as ours, disclose its foundations and the archives of its owners. It was, however, no vast structure. It could have been little more than a donjon keep, comfortless as a domicile, since every window was a shot hole, and air and light could not be admitted without inviting an enemy; but it was strong as a fortalice. It stood, I opine, on the ground now occupied by the church, and a military eye would at once fix on such a position, where two sides are protected by the river and its high cliffs. Besides, here rises the Castle hill to which it gave name, only separated from it by a ditch, said by Baines to have been "forty yards square." More fortunate than its subordinate one at Weeton, the site therefore of Penwortham's Norman stronghold has not entirely been lost. Moreover its early demolition will account for the little we know of it, and its total disappearance may be chiefly ascribed to the great slips of the river cliffs, which old documents assert were of frequent occurrence. The area therefore of the upper plateau, as well as the lower must have been larger and may have been the sites, with the keep between, of the outer and inner ballia. This is not a mere conjecture; though there are no

signs of ditch, or walls, with the exception of the one named, which appears only to have surrounded the keep. Grose's military antiquities contain a similar plan of a Norman fortalice and represent such an eminence as Castle hill, as being always, or nearly so, erected in the outer bailey, for a Court hill, or tribunal, where the baron, as high justiciar, executed justice. For this particular reason, and for a specula, the erectors of Penwortham's fortress had elevated and conically shaped the hill, so often referred to, by bisecting the butt end of the upper plateau with a ditch, and applying the sand and marl thrown out to accomplish the object they had in view. Of this we had occular proof, as well as how the elevation had been effected at two different times; for at some four or five feet from the present summit, at G. in figures 4 and 5, we cut through a thin viscous layer of black surface soil, on which some remains of a pavement were visible.

Castle hill then, in all probability, was the tribunal of Penwortham's baron, where *Ranulph, Earl of Chester, held his court, after he had received confirmation from Henry III. of the lands between the Ribble and Mersey, and succeeding mass and mesne lords their courts leet and baron, or as it is usually styled, the "King's Court,"—the Aula regis.† And it was no uncommon meeting place. The Constablewick of Garstang, to the date of 1816, issued its laws and regulations from Constable hill, on the Wyre. But Castle hill, we have seen, was more than this. The Mote hill of Warrington more nearly resembles it, seeing that different people in succession have occupied it, as remains declare; but the round hill near Cartmel, called Castle Head, approaches closer to it still. Here there were discovered about a half century ago,—"Parts of a human skull, vertebræ, &c., jaws of a large species of deer, teeth of buffaloes and other animals, tusks of a boar, &c., rings of silver, brass, and iron, beads of blue rag stone, lead and clay, 95 sticas of Northumbrian kings, 75 Roman coins, iron ore, petrified bone, pebbles, pottery and imitations of muscles." These, however, were not exhumed from the ruins of a dwelling. I find nothing to compare with Castle hill: it is unique, at least I know of no parallel.

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* Coucher Book in Duchy Office, n. 78.

† Tradition says, that a verdict of the Aula regis of Penwortham, not a century and a half ago, executed a criminal, but whether on Castle hill or in Hangsman's field I cannot learn.

ON RESEMBLANCE, IMITATION AND PLAGIARISM IN ENGLISH POETRY.

By David Buxton, Esq.

(Read 11th December, 1856.)

To descant, here, upon the pleasures to be derived from literary pursuits, would be to repeat, very unnecessarily, an oft-told tale. They are as various in kind, as they are inexhaustible in extent. Addressing minds of very different capacities, and influenced by very dissimilar tastes, Literature furnishes the requisite stimulus to the enquiries of each, and dispenses an appropriate reward to all. And still more, I think we may readily trace in ourselves the disposition and the habit to notice the different peculiarities of familiar authors, and even to note the various characteristic features of each individual writer, at different times, according to the temper of mind in which we read. Who amongst us is not conscious of these varying moods? Do we not sometimes dip into a favourite book, in the lazy temper which only wishes for amusement? and sometimes too, let us hope, with the worthier disposition which seeks the instruction which sound wisdom can afford, or the ennobling thoughts which the rapt poet can inspire? Are we not sometimes inclined to receive, implicitly, whatever the author lays down? and, anon, pugnaciously resolved to dispute every proposition he advances? In reading a good poet, I think we must, at times, find ourselves disposed to let our admiration rest chiefly upon the vigour of his conceptions; at other times, perhaps, upon his power of illustration; then, upon his force of expression; and again, upon his grace of diction, or melody of language. These are all so many claims upon our admiration, which works of the highest character irresistibly urge; and the fact that some particular merit seems to come more closely into view at one time than at another, arises solely from our own varying moods, which prompt us always to take the highest pleasure in that which, at the moment, is most congenial and accordant with themselves. The glorious

work which, in its completeness and greatness, commands our admiration, stands ever unchangeably the same; the soaring mountain which pierces the clouds with its summit, and glasses itself in the liquid depths below, remains as immutable as it is immovable; but its aspects of loveliness and grandeur change perpetually with the lights and shadows of the hour, and are presented in different phases as we change our point of view. So with the creations of human genius. We see their various features, at various times, because we observe from different points, and through the medium of different emotions. Yet, to every tone of human feeling they are faithfully respondent; answering now with tenderest sympathy; then with enkindling fervour; but always with unerring truth: almost infinite in their various modifications, yet exquisite in all. Whose writings, for instance, can in this respect be put in comparison with those of Shakspeare? What fun is more genial than his! what wisdom more profound! what pathos more touching,—what tragic terrors more sublime! what pictures of nature and of man so vivid and lifelike; what lines more musical; and what words more significant and apt, than may be found in almost prodigal abundance throughout his matchless works!

In a Paper which I had the honour to read before the Society two years ago,* there occurs the following passage:—"I do not pause to point out the resemblances which may be traced between many familiar passages in modern poetry, and some which are to be found in Cowley. *That* is a branch of literary investigation, which, if followed out, would reveal some curious facts. I hope some member of the Society having the requisite leisure may be induced to take up the subject, and bring his reading to bear upon it, in its threefold aspect of unconscious resemblance, avowed imitation, and arrant plagiarism." (p. 60.)

That friendly challenge, has, to my disappointment, not been taken up. It only remains, therefore, for me to attempt to do, what I would far rather have seen more efficiently done by abler hands. And here I must premise, that I shall limit myself to English Poetry alone. I do not propose to travel out of the domain of our own language. Our indebtedness to the poetry of the Classical and other tongues, is a matter of familiar knowledge to us all; but the subject is too wide to be entered upon now, and it is besides,

* Cowley and the Poets of the Seventeenth Century, Transactions, vol. vii. p. 49.

beyond my power of handling. Nor shall I so much as touch upon one branch of the subject, which *does* lie within the limit I have now prescribed for myself, namely, the imitation or the appropriation of Scripture imagery and expression. If on the one hand, we may well rejoice that English poetry has derived so much of its beauty and power from the Book of Divine Inspiration; there is too much cause to deplore, on the other, that the kindling narratives and lofty precepts of the Sacred Volume have been so often degraded by unworthy paraphrase, and diluted in the wretched versions of pretentious rhymesters. When to our admiration of the matchless poetry of the Book, we add the profounder feelings with which we regard it as the revelation of God's Will to man, it seems to say to all who have ears to hear,—"put off thy shoes from off thy feet, for the place whereon thou standest is holy ground."

It cannot but be that this exclusion of the Classical, Foreign, and Scriptural elements from our enquiry, will very much lessen its scope; though I trust it will not be found to deprive it entirely of interest, nor even of some degree of profit.

The charge of plagiarism is one that is often made, against poetical and other writers;—not always, it must be confessed, without reason. But it is evident that there is a degree of resemblance, and even of imitation, which is perfectly allowable. There are no rights of property in thought. The floating fancy, or the profound speculation, is equally within the reach, (and therefore open to the appropriation) of all men similarly endowed; and a writer is not to be precluded from following out his own conception, because it happens to bring him upon ground which some predecessor or contemporary has trodden before him. When this is done with taste and judgment, it would be mere hypercriticism to condemn it. There are, also, avowed imitations, which give a zest and grace kindred to that which a happy quotation gives to a passage in prose. There are, besides, unconscious imitations, many of which it must have occurred to every attentive reader to notice, and some of which will come before us in the illustrations to be quoted hereafter. A rigid canon of exclusion would deprive our Literature of some of its chief ornaments. Many of our most eminent authors have purposely taken the plots and frame-work of other (sometimes inferior) writers, and made them their own. Chaucer, we know, took the idea of his *Canterbury Tales* from the *Decameron* of Boccaccio. Shakspeare appropriated dramas which he found ready to his hand, and turning them to

shapes which no other mind could have given them, sent them forth to endure, not for an age, but for all time. Sheridan, long afterwards, did the same; and so in one instance, did Coleridge. And these great writers I mention, not as standing alone in this matter, but because their fame has placed them before the world "in form and gesture proudly eminent." It is true that they did not refrain from touching the works of others; but it is equally true that they "touched nothing which they did not adorn."

There is another fact nearly connected with the subject under consideration, which may here be alluded to. The success of a particular author, or the popularity of a new style of composition, frequently begets imitators. There seems to be a fashion in the dress of human thought, which, like the more familiar *modes* of personal attire, is sometimes carried to a vicious extreme. Mackenzie's *Man of Feeling* was undoubtedly written in imitation of Sterne. The success of the Waverley Novels produced the Historical Romances of James, and others. When Bulwer chose a Highwayman for a Hero, he perhaps had little idea that *Paul Clifford* would prove the literary progenitor of *Oliver Twist*, or that Mr. Harrison Ainsworth would "better the instruction" of his master, by multiplying *ad nauseam* such books as *Rookwood* and *Jack Sheppard*. The sudden success which was achieved by Dickens under his pseudonyme of "Boz," brought into the field a host of other writers, who imitated the characteristic features of his style, and have not altogether failed to gain some reputation for their own merits. In poetry, there was, in the reign of Charles II., a French fashion. The court poets of the "Merry Monarch" drew more of their inspiration from Versailles than from Parnassus. Nearer to our own times, the German element has considerably influenced the poetry of this country. The legendary Ballads of Bürger and his contemporaries were imitated by Sir Walter Scott, and "Monk" Lewis. The loftier strains of German minstrelsy enkindled the poetic fire in Wordsworth, Coleridge, and other Bards of our own or the last generation. The irregular, and yet constant measure of *Christabel*, found admirers and imitators in Scott, Byron, and Rogers. The metre of the *Corsair* and *Jacqueline*, is clearly formed upon the model which Coleridge had furnished.

The particulars now adverted to, describe, I think, the whole field of permissive imitation or appropriation. Beyond this, it becomes plagiarism —literary theft.

Here, in the original paper, follow the examples which were adduced to illustrate the preceding remarks. These extracts, which extended to a very considerable length, I do not think it necessary to repeat. They would not only occupy too much space, where space is very valuable, but would in a measure defeat the object with which this paper was written —that of suggesting an interesting subject of literary investigation, and leaving it to others to pursue.

I will content myself by giving some of the illustrations from Cowley, only. These will afford a sufficient specimen of the manner in which the subject was treated, and will also furnish some details supplementary to the Paper already referred to, concerning one of our native poets, who is less familiarly known than others whose names will follow.

I take the first extract from one of his amatory poems:—

"How could it be so fair, and you away?
How could the trees be beauteous, flowers so gay?
Could they remember but last year
How you did them, they you delight,
The sprouting leaves which saw you here,
And call'd their fellows to the sight,
Would, looking round for the same sight in vain,
Creep back into their silent barks again."

There are thousands of readers who never saw this passage in Cowley, who have been made perfectly familiar with the idea which it embodies by those well-known lines of Burns, beginning, "Ye banks and braes o' bonny Doon."

In the first poem of the collection entitled, "The Mistress," Cowley thus sings:—

"Strike deep thy burning arrows in:
Lukewarmness I account a sin,
As great in love as in religion.
Come arm'd with flames, for I would prove,
All the extremities of mighty love,
Th' excess of heat is but a fable;
We know the torrid zone is now found habitable."

Among the contemporaries of Cowley, though an older man, was Thomas Carew. He died at the age of fifty, when Cowley had barely

attained the age of twenty-one. To the elder writer may therefore be fairly conceded the credit of having been the originator of the thought or conceit which is common both to the passage just quoted, and the one which follows, from Carew's well-known song:—

> Give me more love, or more disdain;
> The torrid, or the frigid zone,
> Brings equal ease unto my pain:
> The temperate affords me none:
> Either extreme of love or hate
> Is better than a calm estate."

Perhaps there is no couplet in our language more frequently quoted, either for approbation or reprobation, than this of Pope's:—

> "For modes of faith let graceless zealots fight,
> His can't be wrong whose life is in the right."

The original of this is in Cowley. In his verses on the death of his friend and brother-poet, Richard Crashaw, who had left the Church of England, and died in the communion of the Church of Rome, he says:—

> "His faith, perhaps, in some nice tenents might
> Be wrong: his life I'm sure was in the right."

In the *Davideis* is an expression which has been used by several subsequent writers:—

> "Nothing there is to *come*, and nothing past,
> But an eternal NOW does always last."

I think I remember the same thought in Southey's *Thalaba*:—

> "An everlasting NOW of misery."

And in Talfourd's *Athenian Captive*, we have—

> "No! 'tis not past! the murderer has no PAST;
> But one eternal PRESENT."

In *The Wish*, by Cowley, the following is the concluding verse:—

> "How happy here should I
> And one dear she live, and embracing die;
> She who is all the world, and can exclude
> In desarts solitude,

I should have then this only fear,
Lest men, when they my pleasures see,
Should hither throng, to live like me,
And so make a city here."

Now, while retrospectively this reminds us of the description of Una, in his favourite Spenser, "whose angel's face," did make "a sunshine in a shady place;" it has had imitators in the nineteenth century. Do you remember that passage near the end of *Childe Harold*, beginning,

"O that the desert were my dwelling place,
With one fair spirit for my minister."

And can we not trace the same thought in that pretty verse of Moore's, in his *Loves of the Angels*:—

"Throughout creation he but knew
Two separate worlds: the one—that small
Beloved and consecrated spot
Where Leah *was*: the other—all
The dull wide waste where she *was not*."

[The further illustrations included quotations from Shakspeare, Spenser, Donne, Southwell, George Herbert, Milton, Flatman, Bishops Jeremy Taylor and Ken, John Bunyan, Katharine Philips, Norris of Bemerton, Pope, Cowper, Burns, Goldsmith, Blair, Campbell, Coleridge, Southey, Moore, Byron, Talfourd, and P. J. Bailey. These however, for the reasons already given, I pass by. It is not by any means to be supposed that the field of enquiry was exhausted by the extracts which were read.]

Thus we have gone over and surveyed a large space in our National Literature, but omitting, purposely, all reference to any other poetry than our own. We have seen that, in some instances, the resemblance is rather in sound than in sense; in others, that it is in sense more than in sound; in some few, that the appropriation extends to both these; that, occasionally, the same simile is employed to illustrate a different subject: and again, that the same subject is embellished by a different metaphor. If we had gone into a lower rank of the literary profession, and instituted our right of search into Grub Street, we should have found, too probably, stolen property in abundance. Poets, like bees, have all the garden before them; it blooms with flowers to which they are all heartily and equally welcome, but the honey which they offer for our enjoyment should at least be their own.

After all, it may be said, and most truly, that these little things are of little value. They are simply curious. No man should read with the direct object of discovering them: that would be, indeed, to traverse a beautiful scene with the mind and views of a detective policeman, intent only upon the disclosure of some dishonest act, and therefore blind to the manifold beauties which smile everywhere around.

But if little can be said for the profitableness of this sort of investigation, it is, at least, curious and interesting; it shows how the material of thought is variously operated upon in that wondrous crucible—the human mind; and as we con over these curious results, we may justifiably think, that though they are not worth much trouble in seeking, they are among the things which, "when found," may, as Captain Cuttle advises, be "made a note of."

THE FAUSSETT MUSEUM, AS AFFORDING MATERIALS FOR HISTORY.

By John Robson, M.D., Warrington.

(Read 2nd April, 1857.)

About the middle of the last century, two gentlemen were closely searching into the antiquities of their own neighbourhoods. Both were clergymen of the Church of England, both were men of learning, and they were alike eager in the pursuit of knowledge; but the results of their labours have been widely different. The Rev. John Whitaker, a native of Manchester, related the history of Lancashire and Cheshire with much minuteness of detail. The wars and alliances of our predecessors on both sides of the Mersey, for some centuries before Christ, and the foundation of Manchester about the period when Cæsar landed in Kent, are told at great length, and leave nothing to be desired but evidence of the facts. He quotes largely from Richard of Cirencester, and Ossian is a great authority with him; and his History, which obtained a good word from Gibbon, was a sort of store-house for succeeding writers. With an abundant fancy, and no want of erudition, he attempted to realize the events of that early period, and the slightest hint, even a misapplied inscription, was sufficient to enable him to sketch out an invasion and a conquest, with all its accompaniments and consequences.

But time, the avenger, has had his turn, and Mr. Whitaker's attempts to bring back the past are themselves being forgotten. His work is shown to be a mere romance; his Roman stations, his own cherished discoveries, to have been mere dreams; the conclusions which he came to, with reference to acknowledged sites, altogether erroneous; and the two first Books of the History of Manchester utterly false in principle, and not to be trusted in details.

Mr. Whitaker and the Rev. Brian Faussett do not appear to have had any communication together, nor indeed is it likely that they had any knowledge of each other. In those days there was no great facility for knowing what was doing in distant parts of the kingdom, and Mr. Faussett

seems to have followed out his own plan in his own way, and by himself. His mind and Whitaker's were essentially different. If he had any power of fancy, he took care to keep it well under. He thought at first that the burial-places were the sites of battles in the time of the Romans, but he soon found out his mistake, and it seems to have been a lesson for him ever after. When he found a something he could not make out, he provisionally called it a "whistle;" but when more specimens turned up, he referred back to his first assumption, and candidly owned it was "most likely nothing of the sort, only there was no harm in guessing." Mr. Faussett's Journal, written nearly a century ago, is now as valuable as it was then, nay, even more so; for if it had been published at the same time as Whitaker's History, it would probably have gained little notice, and been left to neglect as a dull collection of trifling matters, when compared with its brilliant rival.

It is indeed fortunate that the Journal has been printed, and the Museum thrown open to the world at the present time,—the very period that Faussett, who was far before the Archæologists of his own age, would have chosen. His treasures now can not only be appreciated, but applied to the illustration of history, and do in fact form materials whose importance is best known to those who have paid most attention to it. The evidence they afford of the state of Kent for many generations is unimpeachable. They show that the condition of the people must have been tolerably prosperous, and that they have gone down to the grave in peace. They prove that Roman art and taste had influenced their personal ornaments, though there is nothing to lead to the conclusion that Mr. Faussett found the grave of a single Roman; and while a few Christian emblems have been turned up, they are only enough to convince us that the great mass of interments were not Christian at all.

I believe these general conclusions may be safely drawn, but we must review with more detail the facts upon which they rest; and as there is some diversity of opinion as to the real age of the cemeteries, it will be necessary for me to report to you these discrepancies, and then place the facts and evidence before you, requesting you to bear in mind the difficulty, and, at the same time, the importance of the inquiry.

Faussett, in his account of Kingston Down, where he found some of his best relics, and where he catalogues the opening of 308 graves, says, "For

I think this spot will from thence appear to have been no other than a common burying-place of Romans, no doubt (and that, too, from a very early period), but not of these alone, but also, if not chiefly, of Romans Britonized, and Britons Romanized (if I may be allowed the use of these expressions), till long after the Romans, properly so called, had entirely quitted the island."*

And again in his introduction to his Journal of the excavations at Sibertswold Down, where he opened 181 tumuli, after stating that his previous opinion was, that the place had been the site of a battle, that the graves were those of the slain, and that he was confirmed in this by the discovery of what he supposed to be a Danish spur, he goes on—"but upon trial I was soon convinced of my mistake. For though I this summer opened no less than 168 of these tumuli, and the whole of those in Barfriston adjoining, to the number of forty-eight more, yet not a single spur or anything else occurred that seemed to have the least connection with either Danes or Saxons. But everything we met with was much of the same kind with what I found at Ash and Kingston * * * and I make no scruple of declaring myself to be confident that the persons here buried were neither more nor less than the peaceable inhabitants of the nigh village or villages, which inhabitants I take to have been Romans Britonized, or Britons Romanized; that is, as I have said before, people of both these nations, who, having in process of time intermarried with each other, had become, as it were, one people, and had naturally learned and adopted each other's customs and ceremonies."†

And with reference to the graves at Kingston, he concludes "that it might have continued to be a burying-ground after the arrival of the Saxons in this isle; nay, perhaps even to the time when Archbishop Cuthbert (who came to the see of Canterbury A.D. 741), obtained a dispensation from the then Pope for the making of cemeteries or churchyards within towns or cities, whereas, here, in England, until his time, within the walls thereof none were buried."‡

At Beakesbourne he "guessed that the persons here deposited were buried about, if not long before, the time that the Roman legions left this island for the last time, namely, about the year of Christ 418, or at the latest before the coming in of the Saxons, which was about the year of

* Invent. Sepulcr. p. 87. † Ibid p. 102. ‡ Quoting Weever's Fun. Mon.—Ibid 88.

Christ 449." But he says it might have been used as a burial-ground long before, as well as long after those periods, and he is persuaded there is nothing Saxon about the place.*

Mr. Roach Smith, in his Introduction, takes quite another view. After the evacuation of the island by the Romans, he says, "When the light of history dawns again upon the mysterious drama, it is fitful and uncertain; but when the curtain, or shroud rather, is raised, we see upon the stage a mighty change. A new people has occupied the land. * * * But of the precise time when the great advent commenced, and when completed, the traditions, which under the name of history have descended to us, leave us in doubt."†

"Had he (Mr. Faussett) been previously acquainted with the characteristics of Roman and Romano-British remains, he would probably have at once surmised that the weapons, the implements, and the ornaments, unaccompanied by indications of contemporary cremation, must have belonged to a time subsequent to that to which he referred them."‡

In another place he more particularly states that these cemeteries cannot be referred to a period anterior to the fifth century, and therefore the earlier Roman coins can afford no evidence as to the date of interment.||

One more extract from Mr. Smith's learned and elaborate introduction is of the very first importance. "As we often find the cemeteries are contiguous to, or surrounded by Roman or Romano-British burial-places, we seem to discern, in the contiguity of the dead, the result of an amicable relationship. In many places, where opportunity has been afforded of watching the exhumation of Roman burial-places, it has not been unfrequently noticed, when the Roman interments have been exhausted, that Saxon graves follow in close proximity." This has been noticed especially in the neighbourhood of towns, as at Stroud and Colchester, and remarkably at Crundale.

We may remark that both Mr. Faussett and Mr. Smith are satisfied that the graves were those of one people; the one considering them as British or Celtic, and dating them before, the other after the middle of the fifth century. It does indeed seem impossible to believe that these burials belonged to such a terrible period as the end of the fifth and beginning of

* Ibid p. 146. † p. 11. ‡ p. 18. || p. 48.

the sixth century must have been, if the common opinion of the Saxon invasion be correct. The destruction of a race implies such suffering on the one side, and such barbarity on the other, that funerals like these could not have taken place. Still there were the coins of the fifth and sixth centuries, which Faussett ignores, and the crosses, which Mr. Smith can only receive as personal ornaments, not as Christian symbols; besides the strong probability that the Saxons on the continent, at that period, used cremation; and there are, moreover, certain admissions by both gentlemen, which we shall use to show that the whole truth does not rest with either.

Since the publication of the INVENTORIUM SEPULCRALE, we have had a review of it by the learned and eloquent author of "The Saxons in England." Mr. Kemble's views are altogether different. He says, "it is impossible to doubt that the elaborate ornaments, the improved pottery, the buried skeletons of the Kentish grave-yards, mark a much more advanced development of culture, and probably a much later period of time than the rude evidences of cremation in Norfolk and Suffolk. * * * The Kentish deposits remind us rather of the settled districts under Frankish rule, and the Merovingian culture of North France, Germanic, indeed, but modified by Roman models, and the adoption of the Christian Faith. * * * There is in fact nothing in these interments inconsistent with the supposition that they belong to the period extending from the commencement of the seventh till at least the first half of the ninth centuries."*

Mr. Smith speaks of the intimate connection of the Roman and Saxon graves, forgetting the British or Celtic of the first half of the fifth century; and Mr. Kemble puts aside not only these, but the Heathen Saxons of the fifth and sixth centuries, and starts at once from the Christian period; so that we must suppose the Christian Saxons of the seventh century again went back to cemeteries, which had been disused for at least two hundred years. It may be supposed, that as most of the bodies are laid east and west, they must have been Christian; but, from the numerous exceptions, we cannot place much reliance on this circumstance. In a cemetery, too, which has lately been discovered at Hartlepool, and supposed to be of the seventh century, the bodies are laid north and south, but the grave-stones are sculptured with Christian emblems.†

* Arch. Journ. Sept., 1856, p. 299. † Arch. Journ. vi., 136.

In fact, that these graves were not those of a Christian population is evident from the want of the marks and symbols which exist in every Christian cemetery, and from the repugnance which the faithful, at that period, had to rest in ground which must, in their eyes, have been especially devoted to the devil. We know that very soon after the arrival of St. Augustine, churchyards were common burial places; and if the old cemeteries were anywhere in use, we may be sure that if churches were not built upon them, crosses would be erected; nor, indeed, is it at all probable that the memory of a Christian burial ground would ever have been lost. But when Mr. Kemble asserts the resemblance between the Kentish relics and the Frankish under Merovingian rule, he puts the question on its right basis. The Saxons in England had then as settled a government as North France, and Roman influence was acting upon the former as much as on the latter; perhaps one nation was as much Christian as the other.

The agreement of these three archæologists, that the graves belonged to one race, and to a civilized and settled community, is important, as enabling us to start from a sure point, and with something to guide us on our way. For, except a few coins, nothing has been found that gives us any clue to the chronology of the deposits; and hence the remarkable difference between the three gentlemen; Mr. Faussett assigning the second, third, and fourth centuries; Mr. Smith the fifth and sixth; and Mr. Kemble the seventh, eighth, and the first half of the ninth, for the period in question.

It will be well to observe that the terms Roman occupation, Roman interment, and such like, are used with great latitude, and it is desirable that the reason or fact upon which the name is assigned should be clearly given. The graves at Crundale are (many of them at least) by universal consent said to be Roman, but that the bodies there deposited were those of actual Romans, or even Italians, there is nothing to show. The number of Roman soldiers, officials, and settlers here must have been, comparatively, very small. The Legions, if always kept to their full complement, would not have been more than 18,000 men, which were principally distributed in the north; and it must be remembered that a large proportion of these, though Roman citizens, were really provincials, from many parts of their great empire. Where a Legionary was buried, however, we find the fact recorded on inscribed stones, wherever Roman garrisons were

established. Besides those natives who obtained the citizenship, we have also the civil officers employed by the government in the collection of taxes, the superintendence of the post stations, and other departments, who were scattered over the country; and it would probably be through these last classes that the Imperial civilization would chiefly be promoted. Kent is always named as the most advanced part of England, and this would naturally follow from its continual intercourse with the continent and with the Roman officials. It had, from a very early period, two or three garrisons, though of no great extent, and there were other towns connected with the post stations, which may have been centres of trade and manufactures. Still, the body of the people were of the genuine Kentish stock; they were, to use Faussett's expression, Romanized Britons; they adopted the manners of their conquerors, used their pottery (a great advance in civilization), copied their personal ornaments, and had similar modes of burying the dead. But as far as Mr. Faussett's researches go, and indeed the later ones too, there is no direct proof, even at Crundale, that a single Roman was ever interred in any of these cemeteries. Not an inscription nor symbol, nor sign of any sort has been found, to identify any remains as those of a veritable Roman man or woman, while everything tends to show that the mass of the people had become, in certain respects, Romanized.*

The influence of Roman art on everything that has any character at all, is confessed on all hands; but when we consider that according to the received history, the Romans had left the country fifty years before the arrival of the Saxons, the influence would be in fact that of the original inhabitants, and as the conquerors must have set about their work of extermination immediately, I must confess I can see neither time nor

* We are here especially referring to the researches that have been made in Kent, by Mr. Faussett and others, but there is one relic in the Museum, of the discovery of which, unfortunately, we have no account, but which is said to have come from Norfolk. This is a genuine Roman cinerary urn, of a tasteless shape, badly made of coarse clay, with a very rude ornamentation; in fact, it would be classed, at first sight perhaps, as very late and poor Saxon. But this urn has an inscription upon it, *to the manes of Melia Rufina, who lived thirteen years, three months, and six days.* The letters are without ligatures or contractions, and apparently of a much earlier date than the urn itself would indicate, if we did not take into account that both coarse and fine pottery would be made and used at the same time, and that when the poverty of a family did not allow it to get the more costly, it had to make use of the commoner and cheaper ware. The antiquity of this inscription has been doubted, but the late Mr. Kemble expressed his belief in its being genuine, and intended to have written an account of it.

opportunity for any such influence showing itself at all. It could only have been exercised during the period when the Roman power was in existence and in active operation. After a few generations we look in vain for traces of it in the coins, in the buildings, or in the personal ornaments. Even the pottery, almost a necessary of life, seems to have gradually become more rude and useless, and to have been no longer made for domestic purposes. This fact defines pretty nearly the period of one part of the interments, while the others are limited by the absence of Christian memorials.

But another point of great importance is also undisputed, viz., that these interments took place in a country which was peaceful and settled. That generation followed generation is evident, not merely from the extent of the burial-grounds, but from the fact that the custom of cremation had actually ceased during the period. When this took place I am unable to say, but most likely burials had been growing more prevalent in the second and third centuries. There can be no question, however, that few bodies were burnt after the empire became Christian, under Constantine, and not the least proof or probability that the Kentish men re-adopted it when they regained their independence.*

The epoch of 449, the so-called arrival of the Saxons, is in the way of both Mr. Faussett and Mr. Smith; one takes the anterior, the other prefers the century that follows; while both allow that interments have taken place out of the period which each assigns as definitive in his own hypothesis. Mr. Kemble's views are quite in another direction, but his position is altogether untenable, and has no support from any investigations that have been made; indeed, as I have already shown, it is at variance with all the facts that have been brought to light. That these cemeteries should have been the work of the Christians of the seventh and eighth centuries, and neither symbol, nor inscription, nor tradition remain in any one of the many localities, is quite at variance with all that we know of the state of Christianity as then existing.

The pottery which has been found in many graves was probably used in the funeral ceremonies, and consequently dedicated to the gods of the tomb; no sure inference can be drawn from its pattern or material as to

* Urendi corpora defunctorum usus nostro sæculo nullus fit. Macrobius, Saturn. 7, 7. It would seem that it had ceased in the time of Apuleius, in the second century, amongst the common people.

the date of the interment. We must bear in mind that common pottery retains its form and character through many ages, and that the brown ware of the present day is coeval with the richest and most delicate porcelain. The ancient manufacture in this kingdom was of a very simple kind, and may be classed under two heads; 1st, that bearing more or less a classical character; and, 2nd, that where there is no characteristic of any kind. A vessel of clay was wanted, and it was made with a wide mouth, or a narrow neck, and a round, or flat, or conical base, with patterns showing more or less skill (or more correctly, various degrees of unskilfulness) indented on the soft clay, and indifferently baked. Where the Roman influence prevailed, however, we have more graceful forms and in greater variety; good mouldings, well burnt ware, and a sort of glaze, which has stood well for many centuries. But it would be hardly safe to assign a date, even in approximation, on the strength of these differences, as undoubtedly all kinds would be in use at the same time, marking, as they do now, the comparative wealth of the several owners. One thing we may believe certain; pottery, for domestic purposes, was exclusively a Roman introduction; with them it came, with them it went; and as, probably, a good deal of the finer sorts was imported, we have evidence of extensive commercial intercourse. As to that made in the kingdom, the clay would vary according to the locality, and particular fashions and modes of workmanship would no doubt prevail in different places; but the original rudeness and simplicity continued as long as the manufacture lasted; which, indeed, does not seem to have long survived the departure of the Romans. Whether we possess any made after the sixth century it is difficult to say. The cups, before the conquest, were of wood, horn, shell, and metals, and if there were any utensils of glass or pottery, they must have been extremely rare.

The coins discovered have been few (Faussett names fourteen Roman, two Merovingian, and a few Saxon), and though of little value as evidence in any individual case, still, as a rule, I think we may presume that a coin found in a grave is to be taken as marking within a few years the date of the grave. There is more uncertainty in some of Mr. Faussett's examples, as in several cases a previous urn-burial was found to have been disturbed by the later deposit of a body unburned, and there is a doubt to which interment the coin belonged. It is possible, too, that the coin might be strung with beads or worn as an ornament. Still, on the whole, I am inclined to believe that they were not only of the period of the burial, but

intended by the survivors as a memorial of the date itself, on the same principle as we still place the current coin of the realm under the foundation-stone of a public building. The coins are chiefly of the third and fourth centuries; specimens of the fifth and sixth are also met with, but not one that can be with certainty assigned to a later period.

The crosses are equally uncertain as to age; three only were found. One, a silver Latin cross, worked with an engraved guilloche pattern, and in another grave a pair of small Greek crosses, also of silver. At whatever period Christianity was introduced into the island, and I believe it took place during the apostolic age, it must have been the state religion for nearly the last hundred years of the Roman dominion; but, as I have stated on a previous occasion, it seems to have made slow progress with the Teutonic races in general, and the *Sexe* and *Engle* in particular. That there were converts, however, at an early period we have presumptive evidence, and these crosses are themselves proofs of the fact; they appear to have been attached to some part of the dress, not suspended. That this Latin cross could have been worn as a mere personal ornament, apart from its symbolical meaning, seems as unlikely as that we should now adorn ourselves with silver gibbets. The cross itself may have belonged to the occupant of the tomb, and have been deposited at any period, from the Roman conquest to the end of the sixth century; or it may have been placed by some friendly hand, who had faith in the sign, that it might "scare the fiends from the heathen's grave."

We come now to the personal ornaments, the beads, buckles, brooches, rings, and bracelets; and while most of these are of a very simple character, such as we might expect any man working in metals would make, some are most magnificent and costly; others, less intrinsically valuable, have a remarkable and elaborate ornamentation, by some qualified as Saxon, by others as Roman, while there is no positive criterion by which to form a judgment. In Mr. Mayer's Museum you will find fibulæ apparently of exactly similar construction, especially as regards the security of the fastening, and with the same patterns of ornament, assigned to both classes. The bow-shaped fibulæ are sometimes wrought in a scroll or interlaced pattern, at other times we find small circles with a dot in the middle, regularly arranged; or we may have merely straight longitudinal ribs and hollows; and some of these forms we find upon the pottery, especially the small circle with the centre dot.

The very classification of these fibulæ into late Roman and early Saxon, shows the difficulty of appropriating such articles to the right owners, and it is most remarkable that nothing is said about the original Celtic race, which, according to the common belief, must have formed the mass of the population in the fourth and first-half-of-the-fifth century. Mr. Smith, in his very interesting work on Richborough, says that "the Roman coins, urns, and other objects of Roman fabrication, sometimes found with Saxon remains, do not prove an earlier date; but they tend to show that the Saxons adopted many of the Roman customs and observances after the Roman forces were withdrawn from Britain." * But this influence could only have been derived from the native Kentish stock, for the Romans had already left them; and it necessarily follows, if they, the native race, had learned aught from the Romans, we should expect to find some memorials left of them. If, however, they had not had the benefit of Roman art, or not profited by it, they could have done nothing for the Saxons. But Mr. Smith further tells us that "the connection between the workmanship of the latest Roman and the earliest Saxon personal ornaments, is often so close that it is difficult to distinguish between the two."†

The difficulties connected with the received history derived from the imperfections and contradictions of the writers of the fifth and succeeding centuries, are increased by the irreconcileable evidence of these remains. "The objects found in them," says Mr. Smith, speaking of these burial places, "are not only frequently of Roman origin, but they show, in many instances, that Roman habits and customs had been adopted and associated with those of the new inhabitants, to an extent which must considerably modify our assent to the popular belief that the Saxon invasion either exterminated the Roman monuments or the influence of Roman civilization." ‡

But if the population, or any part of it, was Celtic (and by Celtic I mean Welsh), it was itself utterly exterminated, and the language annihilated, even to the names of places and estates, which, notwithstanding all attempts to give them a Celtic origin, are clearly and indisputably Teutonic. Nothing, indeed, is more singular than the total oblivion of any people except Romans and Saxons, not merely in Kent, but in England, during the whole period from the second to the seventh century—the Engle, a cognate race with the Sexe, || appearing towards the latter half

* p. 57. † p. 88. ‡ p. 159. || Sexe, Latinized into Saxones, and coming to us through this Latinized form.

of the time. Granting. however, that the people of England proper were of the Teutonic race, the difficulties vanish, and all becomes reasonable and intelligible. The assertion of the national independence, the struggles between the great political parties for freedom on one side, and for power on the other, continuing through several centuries, and even, I believe, mixing themselves up with the Danish occupation in the tenth and eleventh centuries, take a definite form, and though a regular historical narrative is impossible, we may understand the various parties, their objects, and the means used in striving for those objects.

Amongst the general conclusions we may draw from the relics and the INVENTORIUM, we have before observed, that there have been cinerary urns deposited long before the burial of the unburned corpses, and the urn has been either unknown or unheeded by the later generation. It is found broken, but the fragments appear to have been carefully gathered together, and deposited again in the grave.

There seems to have been no particular portion of ground assigned to the rich or poor, as the graves where the gold brooches were found had nothing to distinguish them, either in position or structure, from those which contained merely a buckle, the head of a dart, or nothing at all; the green sod covered all alike, and we have a specimen of that feeling of equality which formed so remarkable a characteristic of our ancestors. Neither do the arrangements differ at different periods of time; generation was deposited after generation with the same forms and the same relics.

The coins found are so few as to be plainly exceptional deposits. They are mostly of the lower empire, and I think must be referred to the Roman period, or, in the later instances, to persons who had the same religion and ceremonies. Roman coins were in circulation after the Romans left the kingdom; but that Saxons just arrived from the Continent (to say nothing of the Continental Saxons of that period still using cremation), would deposit a piece of money with each corpse seems very improbable. Both these and the Roman keys, chatelains, and similar articles, could hardly be supposed to be used by a people who must have begun and kept up a work of destruction and extermination, instead of adopting the manners and manufactures of the Kentish people.

The crosses serve to show that Christianity was not altogether unknown. Fragments and traces of linen and woollen cloth and leather were also found.

An opinion may be formed from these graves as to the condition of the people. The principal part seems to have been coffinless; a shield of wood, with an iron boss in the centre, fixed with broad-headed silver-gilt nails, a spear, a dart, a sword, and a knife,—such are the contents of the richest male graves, and they are rare. Generally a spear or dart, or knife and iron buckle may have turned up, but very frequently indeed the result was nothing. In the female graves we have beads of amber or glass, or coloured pastes, chatelaines, shears, rings, and armlets. The valuable gold brooches belonged to men; some of the rings are silver, but, except the brooches, there is nothing of much intrinsic value. In all these articles, however, the influence of Roman art is undoubted. If not the work of Roman artists, they are, at any rate, of the Roman school. The same may be said of the pottery; the bright red ware, known as Samian, is supposed to have been imported, while the common brown, black, or grey vessels were in all probability made in this country. But, as I have already stated, the actual manufactory does not seem to have long survived the recovery of the national independence. If the Saxons had brought over any such art from the Continent, we might reasonably expect that the superior work of the natives would have had a beneficial effect upon the pottery, and that at least it would have continued available for domestic purposes, but of this we find no traces.

I have already stated that the reason of so many earthenware vessels being deposited in the graves probably arose from the custom of bathing and anointing a corpse before burial. Some were used for libations and the funeral feast, and all things connected with it were held sacred, and devoted *Diis Manibus*. How far the Kentish people adopted these practices we do not know, but something of the sort seems to have been prevalent, if not going to the extent of a regular Roman funeral; a great deal would depend upon the wealth and position of the deceased.

We may, I think, now agree with Faussett, in assigning these graves to the inhabitants of the neighbouring villages, who continued to bury their dead in these cemeteries long after the Romans left the island, and even, till the establishment of Christianity. We may also see, with Mr. Smith, in the contiguity of the Roman and Romano-British burial-places, the result of an amicable relationship. In fact, we have here the proof that the Kentish people, who listened to St. Augustine, were as much the

descendants of those who opposed the landing of Julius Cæsar as the present inhabitants are descendants of those who received St. Augustine. The Romans * did not leave Kent of their own accord, they were driven out. The Saxons did not come from the Continent and annihilate the previous possessors; the Sexe were the original dwellers in, and owners of the land, distinguishing themselves as Cantwara, and around them were the remainder of the family, classified as East, Middle, South, and West Sexe. To the north was another great Teutonic or Gothic family, the Engle, which finally, but at a very early period, gave its name to the island, as the land of the Engle.

In conclusion, perhaps I may be allowed to put a question to the Historic Society. Are there no remains of the inhabitants of the two counties whose early condition and fortunes should be the peculiar object of our search, contemporary with those in Kent? Several tumuli have been opened or removed at Winwick; others, whose history I am altogether unacquainted with, are in Dunham Park. Delamere Forest also has been the site of an early cemetery, and there are remains on the fells in Furness that have never been examined. From what was stated here not long ago, the borders of Lancashire and Yorkshire might perhaps afford a good harvest to an industrious and careful inquirer. Every year adds to the discovery and destruction of these valuable relics, and it is to societies like our own that we must trust for preserving and making them available to future historians.

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* We get chance glimpses, at times, of the state of a city or nation under the Roman government, which are beyond price, as they are applicable to other places in like circumstances. The early history of Cologne is especially suggestive. This city was remarkable as a German town in the time of Cæsar; at a later period it became a Roman Colony, which implies as complete a Roman organization as was possible. In the Vitellian wars (A.D. 71) it revolted, and a tribe from the opposite bank of the Rhine sent ambassadors to the Town Council, thanking the national Deities, that they had again returned into the Germanic family and name, and entreating them to destroy the walls of the Colony—a mere safeguard of slaves: and to kill all the Romans in their district. The Council in reply, consider it safer to preserve the walls, and as the colonists had been joined with them in marriage, they think that their neighbours could hardly wish them to murder their own parents, brothers, and children.—*Tacitus Hist. IV.*, 64, 65. Cologne at that early period was essentially German in race, though Romanized even more than our own Kentish peasants.

ON SOME FOSSIL TREES RECENTLY DISCOVERED AT BURNLEY.

By T. T. Wilkinson, F.R.A.S., &c., &c.

(Read 18th December, 1856.)

Discoveries of fossil trees are always interesting to Geologists. They speak to them of a state of things respecting which history is silent; and of myriads of years gone by which set calculation at defiance. The luxuriant Flora which such remains indicate afford a constant theme for their speculations; and although there may be much of reverie in the results of such musings, the importance of the subject can scarcely be overlooked by the more practical portion of mankind, since it has laid the foundation of all the sources of wealth consequent upon the existence and magnitude of the Carboniferous strata of our globe.

In the earlier stages of the science of Geology, for such I presume it must now be considered, such discoveries as those to which allusion has been made, may have been regarded with more attention than they are at present. Their true positions in the classification of the Flora of the period have been in a great degree fully ascertained; most of the charateristic features of such vegetation may be considered as settled; and the nature of the climate in which it grew and flourished so abundantly is no longer matter of conjecture. The arrangement of the fruit and leaves which have adorned the massive branches may still be subject to some slight modifications; but since the connexion between the trunks and their roots has been fully determined the value of fossil trees has been much diminished; yet notwithstanding this diminution they still possess sufficient attractions to warrant a description whenever found, since they furnish us with indications of the extent of those dense old-world forests, which have played so important a part in the enterprise of the present generation.

It is now well known that fossil trees exist in most of the coal measures of Lancashire and elsewhere. They have been found standing erect at Dixon Fold, near Manchester; in the Victoria Mine at Dukinfield,

where their roots have been traced some 18 or 20 feet amongst the shale; and at Wolverhampton they are so numerous as to present the appearance of a fir wood cut down to the stumps. In the Newcastle coal field erect stems are found 150 feet below the present surface. They are also met with at Claycross, near Chesterfield; at Craigleith, near Edinburgh; at St. Etienne, near Lyons; and occasionally other forests, more ancient still, are indicated by the existence of tiers of stems each several yards beneath the upper trunks. A petrified forest occurs at Portland where the roots of the trees still remain in the vegetable soil, whilst their trunks pierce the limestone above. Other trees have been found erect on the coast of Northumberland. In the Derwent mines they are very abundant; and in all the coal measures of any extent they may always be met with upon due examination. Sir Charles Lyell notices their occurrence in Nova Scotia. He says, "The trunks are hollow cylinders, filled with sand and clay, and Calamites abound both here and at Pictou, affording proof that the trees have not been drifted from other localities, as was supposed by some of our earlier geologists."

The determination of the real nature of such remains appears to be due to the late Mr. Bowman, of Manchester; for after a lengthened discussion on the fossil trees found at Dixon Fold, he concludes:—

1. "That they were solid, hard-wooded trees."

2. "That they originally grew and died on the identical spots where they are now found interred."

3. "That they have become hollow from the decay of their wood by natural causes still in operation in tropical climates, and have been subsequently filled with foreign inorganic matter, precipitated as a sediment from water."—*Trans. Manch. Geol. Society, Vol. I. pp.* 112–140.

Mr. Bowman's views were shared by E. W. Binney, Esq., F.R.S., also of Manchester, and by geologists generally, who further hold that the vegetation of the coal measures was aquatic, and that the water was probably salt. Mr. Binney also agrees with M. Adolphe Brogniart, and others, who have been led to conclude that Stigmariæ are in reality only the roots of Sigillariæ, and he figures a specimen in the *Memoirs of the Manchester Philosophical Society, Vol. VIII. p.* 179, from the Dukinfield mine, which proves the point almost beyond dispute. More recently, however, all possibility of doubt has been removed "by the discovery at St. Helens,

near Liverpool, in coal strata, of an upright trunk of a Sigillariæ, nine feet high, with its roots eight or nine feet in length, still attached in their natural position. These roots are undoubted *Stigmariæ ficoides*, and the radicles, formerly considered as leaves, spread out in all directions to the extent of several feet."—*(Mantell's Medals of Creation, Vol. I. pp.* 143–4.*)*

Sigillariæ, Stigmariæ, Lepidodendra, Calamites, and Ferns, abound in the coal measures at Burnley. Large masses of black shale are often found, which when examined are wholly composed of leaves, fruit, &c., together with other remains of a former surface. In the mines near Dunoakshaw, a species of charcoal is plentifully mixed with the coal strata which still bears the impress of the woody vegetation from which it has evidently been formed.

But by far the most interesting discovery in this locality was made in 1853, when a considerable number of fossil trees were found when excavating for the lower floors of Mr. Dixon's cotton mill, near the Hall Inn, Burnley. They were situated at a depth of about twenty-five feet from the surface of the present street, in the front of the cliff which overhangs the river Brun at this place. About fifteen fine trunks were met with by the workmen, in a space measuring 70 feet by 30, and lay in a direction from east to west in the excavation. The surrounding depositions of strata appear to have taken place uniformly, and most probably in still water, as the superincumbent shale bears every mark of having been undisturbed during its formation. The trunks are Sigillariæ of the usual species, and when found were in an upright position. The roots branched out from the bottom of several of the number, thus furnishing additional evidence that Stigmariæ are only the roots of Sigillariæ, agreeably to the opinion of the eminent geologists previously quoted. The outside of each trunk was covered with a crust of fine coal, which has evidently been formed from the bark of the trees, and the interior is filled with a species of yellow sandstone. At the joints this is of a softer nature than the rest of the deposit, and stains the fingers like yellow ochre. Small portions of charcoal were also found mixed up with this yellow substance in some of the specimens. One of the trunks measures fifteen inches in diameter; it divides into sections of about a foot in length, and the bark as usual is converted into pure coal. Another is twenty-four inches in diameter, and measures nearly eight feet in length. It had perforated hard gray shale for more

than six feet in thickness, and the remaining length was imbedded in soft sandstone. Several of the trunks had been destroyed by the workmen, and the fragments thrown into the river; the cavity of one of these measured eighteen inches in diameter, and was beautifully grooved throughout its whole length. A good sample of the trunks has been preserved in the Mechanics' Institution. It measures about twenty-one inches in diameter, and presents most of the peculiar features of this class of fossils.

The finest specimen, however, was met with on the 5th of September. It consists of two portions, an upper and a lower, which were situated about a foot apart, and had evidently been broken and displaced by some violent motion of the surrounding strata. The upper portion is two feet three inches long, and the top and bottom diameters fourteen and seventeen inches respectively; the lower portion was not followed to its termination, but it commenced with a diameter of seventeen inches, and the grooves of both portions answered to each other in every particular. The *top* of the lower part was precisely of the same level as the *bottom* of the upper; thus proving that the dislocation must have taken place horizontally. This specimen is completely coated with a layer of fine bright coal, and has an indentation on one side which appears to have been produced by enormous pressure from without. This cavity is filled with hard gray shale, which leaves the surface of the tree when struck with an iron implement.

On the western portion of the excavation other trunks were visible in the hard sandstone shale just above the coal measures, and numerous specimens of Calamites perforated the rock and shale in all directions. Many of these were coated over with a layer of fine coal, and bore a strong resemblance to the stalks of full grown sugar canes; others were even of still larger dimensions, indicating a period of most luxurious vegetation. One of the Stigmariæ exhibits a well defined pith of about three quarters of an inch in diameter, extending through its whole length; and another specimen branches off in two directions, very similar to those figured by Mr. Binney in the communication previously noticed. The swelling where this portion has been joined to the trunk is well defined, and from the fact of the roots being nearly horizontal and the trunks vertical, we are enabled to infer that the depression of the crust of the earth by which these

remains were transferred from the surface to their present position was produced by forces comparatively uniform and without much violence.

The bed upon which the roots rest is covered with the remains of vegetation. Seed-cones and Ferns occur in abundance, and several specimens of the latter have been procured, which exhibit not merely the usual symmetrically disposed fronds, but also the solid stems, from which the foliage branches off in all directions. One of the finest of these measures about twenty inches in length, by twelve in breadth, and appears to be the middle portion of a much larger plant. It is in the possession of Mr. Joseph Whitaker, who has preserved a considerable number of these impressions. The strata in which these remains have been found lie immediately above the Lancashire coal formation, and the Calamites correspond in character with those found perforating the white sandstone rock at Pickup Quarry, in Habergham Eaves, at a short distance from Burnley. Reckoning from the present surface of the street to where the fossil trees were situated we have a succession of common debris, fine sand, clay mixed with rounded pebbles, gray shale, soft sandstone, hard gray shale—in which the fossils occur; and these are followed successively by shale of a still harder kind, bastard iron ore, and coal seams.

Had the excavations proceeded farther many other trunks would no doubt have been disinterred, and hence "it is impossible to resist the conviction that the earth may contain innumerable forests entombed on the spots where they grew, many of which will ultimately be brought to light by the progress of discovery. So much information has been derived from these and similar discoveries relative to the formation of coal, that an opinion now generally prevails that the vegetation which produced the coal grew in broad and shallow lagoons or sheets of water, receiving at intervals deposits of silt and mud, the detritus of neighouring land. These streams were speedily filled up by the growth of a profusion of Stigmariæ, until, by the accumulation of mud, silt, sand, and the admixture of decayed vegetable matter, the lagoon was converted into a morass. A fresh vegetable growth now ensued of a somewhat different character, consisting of seedlike plants, Equiseta and Calamites, with here and there a larger tree. The spoils of these plants may have furnished materials for beds of peat and coal, resting on a base composed of the remains of Stigmariæ. The lagoon, or the morass, by the repeated subsidences, may have sunk

beneath the level of the sea, and have rendered the basin the receptacle of alternating deposits of sand and clay, and may thus have produced the strata of sandstone, or limestone, which occur between seams of coal. As each deposit was formed it may have been covered, either wholly or in part, by a lagoon, when the same succession of vegetable growth and deposit may have ensued."—*(Richardson's Geology and Palæontology, by Wright, pp.* 440–442.*)*

The accuracy of these views appears to be fully proved by the fossils found at Burnley. Their existence here, and in so many other localities, together with the thick coal measures beneath, indicate a luxuriant vegetation during the Carboniferous period, with which even that of the present tropical regions will scarcely admit of comparison. Some idea, however, of the magnificent Flora which then abounded in these districts may be formed from what is here advanced; but the contrast which this presents to that afforded by the woods and forests which now grow on the surface, is not more striking than the discrepancy which exists between the Zoology of the Palæozoic formations and those which now form the crust of the habitable globe.

ON COMPARATIVE PHILOLOGY CONSIDERED AS AN AID TO HISTORY.

By Rev. Arthur Ramsay, M.A.

(Read 12th February, 1857.)

It has more than once been observed that, in our ordinary conversation and writing, we are prone to use the term History in a somewhat partial and restricted sense. We are apt to apply it either to a mere profitless biography of kings and queens, men and women differing in little, except in position, from more ordinary mortals; or to an account of the political schemes and petty intrigues of rival statesmen, together with a bare, dry record of battles fought, towns and provinces taken and retaken, treaties made and broken, the cabals of Parliaments, the enactments of laws, and the disputes of theologians; or, at best, to a dull detail of disconnected facts and dates, occasionally intermixed with, and relieved by, brilliant and highly-wrought pictures of extraordinary scenes and characters. Such, however, is not the manner in which History should be conceived of, or written. We may possess a perfect knowledge of the events of a nation's life, and the order of time in which they occurred; we may understand the outward form of its political, legal, and civil institutions; we may follow the march of its armies, and accompany the settlement of its colonies, and yet be profoundly ignorant of its history. For History, in its truest and most comprehensive sense, must be something more than this. It must not merely narrate the occurrence of certain facts and events, but set in order, animate, and give expression to these; unfold their origin and point out their connection; show how they are hooked and linked together in the "never-ending still beginning" chain of causes and consequences; and, above all, trace the working of the motive power which underlies them all. It must reflect the spirit of the nation whose career it depicts; lay hold of the salient points of its character; examine the principles and passions by which its people were swayed and agitated; investigate the various turns and windings of the national current of thought and feeling; enter into, realize, and in some degree sympathize with these, in order more fully to understand their influence and develope their working. Moreover, it must

not omit to bring into view somewhat of the inner, as well as the outward life of the people whose fortunes it follows; to enquire into their mould of mind and tone of thought; to trace the gradual progress of their literature, science, and art; the growth of their commercial and manufacturing industry; and to give vivid and graphic pictures of the peculiar manners, the domestic, familiar, and daily habits and feelings prevalent at different stages of the nation's life, as illustrating its social and individual development.

When taken in this wide and expansive sense, History may stretch forth her tendrils, and derive nourishment and support from almost every department of knowledge. In short, there is hardly a single branch of science or art which may not contribute its quota to the enlargement and elucidation of History.

Poetry and mythology, sculpture and painting, geography, geology, and astronomy, archæology, ethnology, and philology, may all be brought to bear upon this study, and each in its turn may assist in unravelling its intricacies, throwing light upon its dark points, and clearing away the mists in which prejudice, party spirit, or the lapse of time may have enveloped it.

With regard to the first of these—Poetry—it is itself the earliest form of History; much ancient History is known to us in no other form; and it has been asserted in a paradox, which has more truth in it than at first sight appears, that Poetry is truer than History. We have already seen that a great historian must have several of the mental characteristics of the poet; above all, must have the poet's imagination; must be able to pass out of his own time and his own feelings, and to throw himself into the times and the feelings of the people about whom he is writing; and we may observe that several of the greatest historians, Herodotus, Livy, and our modern historian of England, have had much of the poet's character and disposition about them. We must, moreover, all of us have experienced the service which Poetry may render to History, in giving vividness and distinctness to our conceptions of the men who lived, and the deeds which were done in other days. Thus it has come to pass that there are few portions of History more familiar to the majority of Englishmen than those which are treated of by Shakespeare in his historical plays. For through that marvellous power which he has of transplanting himself, heart and soul, into other times, he enables us to realize the characters of the men and

women of those days, and the scenes through which they passed, in a manner which the elaborate descriptions of Hume, Smollett, and Lingard never can do. As has been well remarked, "Poetry has a precious power of its own for the preservation of historical truth; can so revivify the past; can put such life into it as to make it imperishable."

But independently of this faculty of irradiating and elucidating history, Poetry has an historical value of its own; for Poetry is the expression of the spirit of the age, as History is of its facts. Poetry is, as it were, the pulse of society; it represents the various currents of a nation's thoughts and feelings; for the poet is the man of his time, the man who gives the most distinct utterance to the deepest and strongest passions and feelings of his time. Thus Shakespeare, Dryden, Pope, Byron, Coleridge, and Tennyson are all types and indices of their ages. They speak out clearly and forcibly that which the educated mass of the nation are most wanting to speak; they give shape and substance to the dreams of many minds, and express the wants of many hearts; and thus, in studying a nation's poetry, we are studying, at the same time, its inner history.

Mythology contains the preface and germ of much positive history; and the legendary lore of nations has always filled a large space in their historical literature. We have, in our own day, seen a great historical mind clearing away, with wonderful skill and sagacity, the mists and shadows which gather round the mythological fountain of a nation's history; and actually making discoveries of historic truth in what used to appear so inextricably fabulous as the early history of Rome.

Geography has been termed both the "Handmaid of History," and "one of the eyes of History;" and certainly, without some knowledge of Geography, History cannot be properly understood. Our conceptions of the great events in a nation's history must necessarily be both indistinct and imperfect, unless we have some knowledge of the country in which they occurred. But it is not merely for the clearer conception of facts and events that Geography is useful. Without some acquaintance with physical Geography we can hardly read aright a people's character,—can hardly understand why certain nations have played certain parts in the great drama of the world's history, and exercised certain lasting influences on mankind in general; why certain places have been the scenes of particular actions; how advantage of position, configuration of surface, and peculiarity of

climate affect a nation's habits, manners, tone of thought, and individuality of character, and, consequently, affect its actions and its history. With such knowledge, we can the better understand why certain nations took a certain course in their migrations; how Athens became the "Mother of arts and eloquence," Rome the "Mistress of the world," Venice the "Bride of the sea," and London the "Capital of the universe;" why certain towns were founded at particular spots, and have become celebrated for their architectural, commercial, or manufacturing pre-eminence; we may realize how much Athens owed to her climate, and England owes to her insular position.

Ethnology again is, equally with Geography, so intimately connected with History as to form almost a part of it.

Geology and Archæology of late years have also asserted their claims, and vindicated their titles to be expositors and illustrators of Historic Science.

I have not spoken of Painting or Sculpture, merely because it appears sufficiently obvious to the most superficial thinker that these are visible and powerful aids and exponents of History, appealing, as they do, to our senses, and placing the most striking scenes of former times, and the most remarkable actors in them before our very eyes.

But beyond those which I have already noticed, there yet remains another of these above-mentioned aids of History, which I have reserved to the last, because, as the title of my paper indicates, I intend to dwell principally upon it. Though one of the most important, it is, at the same time, one whose value is, or at least hitherto has been, least recognised.

Philology—for such is the science I mean—is a term which may be used in two somewhat different senses. It may mean a deep research into, and an extended knowledge of, ancient and modern languages, enabling its possessor to interpret the one by the other accurately and elegantly; and since much historical literature is written in languages different from our own, it is manifest enough that the study and knowledge of these is not only an aid, but an indispensable requisite to him who would clearly examine and fully understand the history of foreign nations.

But there is another sense in which the term Philology is and may be used, namely, a research into the origin and formation of different languages, and different dialects of the same language, together with a

comparison of these among themselves, with a view to discover their affinities, and trace their connexion. This branch of the science, which is usually termed Comparative Philology, includes an examination into the origin and meaning of the names of countries and nations, their mountains, lakes, rivers, and forests; their promontories, bays, and islands; their towns and villages, customs and institutions, as well as an investigation of the successive changes which the nomenclature of these has undergone; and it is to this branch of the subject that I must confine myself this evening.

The application of this department of learning to History had been hardly more than attempted before the time of Niebuhr, who has handled it with exquisite skill, and deduced most important historical conclusions from a searching examination of the names and dialects of the different Latin tribes. Muller, Bœckh, Pritchard, Latham, Worsae, and others have, with more or less success, followed in his wake, and much also has been done by them. Still the principles, which they have most ingeniously worked out in a few individual instances, either with reference to the illustration of a particular period, or to the promotion of a favourite theory, have not yet been applied to History in general as extensively as they might be. As, through the study of the fossil remains of extinct animals, Comparative Anatomy has unveiled the physical and natural history of former ages, so, by an examination of the fragments of dead languages, and a comparison of their relations to living ones, Comparative Philology, when swayed by a skilful hand, may disinter and bring to light many portions of Ancient History; may trace the course of various streams of population, and track, so to speak, the very footmarks of mighty nations in their emigrations and immigrations. And not only may this be done, but it actually has been done. Were it not for the application of Comparative Philology, we should probably never have known the real origin of the Goths, who overthrew the Roman empire, and who were generally supposed to have been of a Thracian stock, until an examination of the specimen of their language, afforded us in the version of the Gospels by Ulphilas, their bishop, in the fourth century, proved that they were more nearly allied in kindred to the northern families of the great German race. In like manner the Gipsies were generally supposed to have been of Egyptian origin, until an examination of their language proved them to have come from the banks of the Indus; and the history and origin of various African and American

tribes, and of the Polynesian races, have been illustrated and elucidated to a considerable extent by an enquiry into the relations of their languages.

But to return to ground more familiar to us, and to take our own country, what a vast amount of history may we extract from a careful analysis of the names of the more prominent features of the land; of its counties and other divisions, its towns and villages, and even the streets of these latter; as well as from the nomenclature of its legal, civil, and political institutions; the names of its wild and domestic animals, its weapons of war, articles of food and clothing, and implements of husbandry and agriculture; an amount so great, that an eloquent modern writer has, with reason, declared that even if all other records had perished, "any one with skill to analyse the language might re-create for himself the history of the people speaking that language, might come to appreciate the divers elements out of which that people was composed, in what proportion they were mingled, and in what succession they followed one upon the other."

It is clear that any attempt to illustrate the truth of these remarks, to be successful, must, to a great extent, be of a popular character, and deal with facts which are well known, and have been often dwelt upon. Even in the application of these facts there can be but little of novelty, although it may be useful to collect a few of them together, and to point out the amount of historical knowledge which may be derived from them when taken collectively. Prefacing thus much, I propose to bring forward a few popular illustrations of the information which may be deduced from an analysis of the philological history of our own country.

The earliest name under which we read of any portion of this island, namely, Cassiterides, or the tin country, points at once to the mineral wealth, and to the commercial nature of the country. Yet this name, being not native but foreign, can afford us no information as to the origin and nature of the inhabitants. The other early names of the Island, however, such as Britannia (probably a Celtic term), Albion, *i.e.* the land of hills, Ynis-wen, or White Island, Kymru (the name of the west), and Lloegr (the name of the east and southern parts), these four last undeniably Celtic, at once instruct us as to what family the aborigines of our country belonged. But even if these ancient names of the country itself were unknown to us, still we could form something more than a conjecture on the subject, from an examination of our oldest geographical terms. The ordinary names of

the great features of the land, of our mountains (such as Pen-y-gwent, Scawfell, Helvellyn, Skiddaw, and Cader Idris); of our rivers (such as Avon, Derwent, Don, Isis, Ouse, Usk, and Esk); of our forests (such as Arden and Dean); and of our oldest towns (as London, Lincoln, and Carlisle), would at once indicate that the earliest inhabitants of this country were of the Celtic race, having probably immigrated hither from Gaul. By a minute and searching analysis of their language, and a comparison of it with the Sanskrit and other Indo-European languages, Dr. Pritchard has clearly proved that these Celts were of Eastern origin.

But the application of Philology may not only enlighten us as to their early origin, it would also, supposing all other written documents to have perished, enable us, in a degree, to reconstitute their latter history. For instance, in the names of many of our towns, such as Lincoln, Winchester, Gloucester, Leicester, Dorchester, Caerleon, &c., we find a Celtic stem, with a Latin adjunct grafted on it; and we may observe, that in all these the Latin element consists of some such word as colonia, castra, legio, or strata, terms which naturally indicate the presence of a great military and colonizing people, at one time masters of this island. If, moreover, we happen to know the names of other of our towns during the occupation of the country by this people, we may infer even more than this; for we may observe that they did not give to the towns which they found new names derived from their own language, but rather latinised the existing names. Thus Caer-Ebraic or Eborac become Eboracum; Llyn Dinas, Londinium; Caer-leol, Luguvallum, (vallum being a literal translation into Latin of the Celtic Caer); Dur-whern, Durovernum; Caer Gloyiis, Glevum; and Caer Seiont, Segontium. And not only so, but even in the names which were given at this period to the different tribes or families occupying the various divisions of the land, we may generally trace some Celtic element, such as car, tre, or dwr, as in *Cor*navii, *Cor*itani, *Trin*obantes, Att*re*batii, *Durotri*ges, &c. This general retention of the native name seems partially to glance at the fact that the Romans, in taking possession of the land, did not exterminate or drive out the Celts; in fact, never wholly conquered them. Yet that they were so driven out and conquered by some nation mightier than themselves, we may conclude from the almost total absence of any admixture of their language in the heterogeneous elements which make up our own, and from the frequency of Celtic names in Wales, Cornwall, and Cumberland; and the survival of the Celtic language in the first of

these divisions, we may draw the inference that the early inhabitants of Britain were compelled by their conquerors to take refuge amid the wilds and fastnesses of these parts of their native land.

Moreover, the nation which did so drive out these Celts has left unmistakeable traces of their occupation of the country in the language which we ordinarily use at the present day; and from this alone, were there nought else to tell us, we might ascertain that this second class of invaders were members of the great Teutonic family, and that their mastery over the country was complete, settled, and of considerable duration. For their tongue forms the great basis of our language. The broad features of nature, sun and moon, earth and heaven, fire, air, and water, day and night, morning and evening; the names of the primary social relations, such as father, mother, husband and wife, brother and sister, son and daughter; of the domestic animals, the products of the earth, and the instruments used in cultivating it, are all Teutonic. From a consideration of the names of the counties of England, such as Nor*folk*, Suf*folk*, Es*sex*, Middle*sex*, Sus*sex*, we might deduce the fact that these Teutonic invaders principally settled in the eastern and southern parts of the island.

But while we find the Saxon thus forming the staple of our language we may observe that it is overlaid with many words of a totally different order, belonging not to the Teutonic, but to the Romance languages. And we may further remark, that the great mass of terms which signify position, preeminence, dignity or honour, are of this latter tongue, a noticeable fact, from which, had we no other information to guide us, we might at once confidently conclude that this third class of invaders became in their turn the ruling power.

Instances of the rule which I have mentioned will at once occur to every one. A few of the most apparent are sovereign, prince, duke, count, baron, marshal, chancellor, treasurer, mayor, peer, parliament, palace, castle, throne, sceptre, and homage. The principal exceptions are earl (which is Danish), sheriff, knight, king, and queen; and with reference to these two last remarkable exceptions, it has been well observed, "that they would make us, even did we know nothing of the actual facts, suspect that the chieftain of this ruling power came in, not upon a new title, not as overthrowing a former dynasty, but claiming to be in the rightful line of succession; that the true continuity of the nation had not, in fact any more than in word,

been entirely broken, but survived, in due time to assert itself anew." But there are other tokens preserved in our language, besides those already referred to, of the Saxon having been, for a time at least, an inferior and oppressed race. Not only all titles of honour, but the terms of war and government; all that pertains to chivalry, and the chase; all articles of luxury, comfort, and personal adornment; and the names of cooked meats, are all Norman; while it has been an oft-repeated remark, that the names of the domestic animals themselves, while alive, are almost universally Saxon. We might instance ox, steer, cow, sheep, calf, deer, swine, fowl, as compared with beef, mutton, veal, venison, pork. From these voices of language alone, we should be able to tell, even had we lost all other history of our country, that the bulk of our population was Saxon, and that they were overcome by, subjected to, and finally amalgamated with, a body of Norman invaders; just as we before concluded from the position of those among whom Celtic terms are most frequent, that these were the earliest inhabitants of the island, and were driven into its mountains and corners by an irruption of Saxons.

But in addition to these two great elements of our language, we find especially in the northern and north-eastern parts of England, many names of places of a Scandinavian origin, or at least having a Scandinavian termination, such as *by*, *toft*, *thorpe*, *thwaite*, *haugh*, *fell*.

The frequency of these and similar terminations in the northern counties, and more especially in the eastern parts, would give us a good hint as to the position of the nations to whom we owe them; while their predominance on the coast, would lead us to suspect that they proceeded from the invasions of a maritime people; and this suspicion would be confirmed into certainty, as we observed, how many of our words relating to seafaring matters (such as ship, sail, skipper, steersman, &c.) may be referred to a Scandinavian origin. We might also remark, that the invaders in question have left among us many words indicating the presence of a nation imbued with a spirit of mercantile enterprise, such as *Cheap*side, *Chep*stow, *Chip*ping Norton, *Cop*manthorpe, *Cop*grove, all containing the same element as *Copen*hagen 'the harbour of merchants.'

From similar sources we might further collect the names of their great chieftains, and the seats of their principal conquests: for Guthrum or Gorm, Grim and Sweyn have identified themselves with such places as Ormskirk, Ormsby, Grimsby, Grimsthorpe, Grimsdale, Swainby, and

Swainthorpe. That they were heathens we might gather from such names as Tursdale, Baldersby, Fraisthorpe, places which are derived from the old heathen gods, Thor, Balder, and Freyer; and that they remained until after they had become Christians, we might conclude from such names as Bishopsthorpe, Nunthorpe, Kirkby, Crosby, &c. Furthermore, these Scandinavians or Northmen comprised both Norwegians and Danes, and the constant occurrence of the Norwegian terms *haugh*, *tarn*, *fell*, and *force* in the mountainous districts of the north, at once leads us to the fact that the former class of northmen settled principally in those parts of the island which most nearly corresponded in physical features to their own native land. The frequency of the Norwegian term *firth* on the eastern coast of Scotland would suggest the same inference.

The succession of these different nations might moreover be often inferred even from single words. Thus Maes-hir (Welsh) is the "long field," but the Saxons say Maserfeld or Mackerfield, literally "the long field-field;" and Wans-beck-water, the name of a stream, is made up of three words, each signifying 'water'; the first Danish, the second Anglo-Saxon, and the last modern English, and each given by people who were evidently ignorant of the meaning of the former term. Thus the Danes naturally called the stream Vand, i.e. water; the Saxons coming after them, ignorant of the meaning of Vand or Wans, retained that word, and added to it their own term for stream, 'beck,' and so the name became Wans-beck, i.e. 'Water-water'; one further addition by those who knew the meaning of neither wans nor beck, made the name equivalent to 'Water-water-water.' Another still more remarkable instance is the name Tor-pen-how-hill, the appellation of a hill in Cumberland, composed of four words, each of which means 'hill.'*

What I have said may in some slight and imperfect degree show how the history of a nation may be partially traced from its language, and the nomenclature of its hills, rivers, counties, and towns. As regards our own towns especially, much light might be thrown upon the early history of many of them, by an enquiry into the meaning and origin of their present and former names, and the titles of their streets, gates, and buildings. To be convinced of this we have only to examine simultaneously maps of the British empire, as it existed during the Roman, Saxon, and Norman periods. There we may see a little history traced in the successive changes of the name of many a place.

* For these instances I am indebted to Dr. Hume.

Let us take for instance the town of Newcastle-on-Tyne. We see it in the first mentioned map, marked as a Roman station under the name of *Pons Ælii*. This very appellation acquaints us with the cause of the origin of the town. The town came to the bridge, just as in Aldborough the ancient Isurium, the majority of the population have moved to Borough*bridge*, a mile distant, and though Aldborough is the parish, and Boroughbridge but a district, Boroughbridge is really the town. So the bridge over the Tyne attracted a population to Pons Ælii. Ælius is said by some, but on very slender authority, to have been a Roman centurion, who gave his name to the town. This however matters but little. Let us now turn our eyes to a map of England during the Saxon period, and we find Pons Ælii has become Munes-ceaster, or Monks-city. And why so? Now there is in the neighbourhood of Newcastle, about a mile and a half from the town, a pretty little suburb called Jesmond, the walk to which, in my younger days, used to be a favourite one with the inhabitants. Houses have gradually crept towards this suburb, and of late a cemetery has been laid out there, and ere many years are over, its name, its locality, and its existence will perhaps have been swallowed up in that of Newcastle, or probably be known to antiquaries alone. Yet to this little suburb did Newcastle owe its name of Monks-chester, and not unlikely, somewhat of its prosperity. Jesmond is but a corruption of Jesus-mount, and here there was a holy well, the resort of numerous pilgrims. The well is, I believe, still to be seen; and the street along which the pilgrims passed is still called Pilgrim street. Many other names such as the Black Friary, Low Friar lane, &c., testify to the fact that Munesceaster or Newcastle, was at one time the resort of monks and friars. Its modern name, moreover, derived as it is from the new castle which Robert of Normandy built there, also involves a little piece of history.

Take again such a town as Bath, with its Celtic appellation Caer Brithow, and the numerous curious legends appertaining to it at this early period; its Roman titles, Aquæ Calidæ and Aquæ Solis or Sulis, indicating that its springs had already been discovered, while its Saxon names Bathan-ceaster, and Akemannes-ceaster or Aching-man's city, show that the healing nature of these springs was also known; and what a fund of information have we involved in the very name of a town.

The various names Ynis-Witryn, Avalonia, Glœstingbyrig, which the town of Glastonbury has gone through; the ancient and modern names of

Chester, Carlisle, Winchester, York, and many others, cannot fail to be suggestive to the lover of history.

And even out of our own country, such names as Jerusalem, Jericho, (the city of priests), Damascus, Murviedro (the muri veteres of Saguntum), Saragossa, Orleans, Petersburg, Copenhagen, and hundreds of others, contain within themselves a fund of half-hidden history.

Much also may be learned from groups of names. For instance, the course of the Roman wall might be traced from the names which occur in its neighbourhood, such as Wall-town, Welton, Wallwick, Thirlwall, Wallsend, &c. Names with similar terminations, such as "by," "feld," "ley," &c., are constantly found lying together in groups within some fixed area, thus denoting the settlements of some distinct race or family.

Historical information to a considerable extent may also be gleaned from the consideration and examination of names of places connected with the history of commerce, such as Worsted in Norfolk (once the principal seat of the manufactures of "worsted stuffs," introduced into England by the Flemings); Tarifa (whence our modern term tariff); Damascus giving name both to the article damask, and to the Damson or Damascene plum, Cambray to cambric, Moussul to muslin, Damietta to dimity, D'Ypres to diaper, Calicut to calico, Drogheda to drugget, Guingamp to gingham, Chalons to shalloon, Nankin to nankeen, Serica to silk, Pergamus to parchment, Oporto to port, Xeres to sherry, Ascalon to the scallion, Corinth to currants, Bayonne to bayonet, Cambodia to gamboge, Cerasus to the cherry, and the river Phasis to the pheasant. There is besides these another large and instructive class of countries and cities, in which the founders of a town or colony have interwoven their own names or that of some friend or relation. Such are Alexandria, Antioch, Seleucia, Ptolemais, Saragossa (i.e. Cæsarea Augusta), Orleans (ancient Aurelianis, from the Emperor Aurelian), Constantinople, Adrianople, Edinburgh or Dunedin (Edwin's town), St. Albans, Colombia, Georgia, Pennsylvania, Tasmania, Louisiana, Maryland, Carolina, Annapolis, Hydrabad, Aurungabad, Portmadoc, Tremadoc, (i.e. Mr. Maddock's town), Edgeworthstown, Birmingham, (i.e. Beorm-inga-ham, the home of the descendants of Beorm), Clapham, Carshalton (i.e. Carew's old town), Ormskirk, Grimsby, and others, to which many other curious instances might be added.

The names of many of our streets and buildings are also fraught

with rich historical associations, and much historical information. The word street itself, derived, as it is, from the Roman stratum, like the termination coln, suggests to us, one important fact of history. The Saxons less civilized, while they have left us many terms denoting a settlement, such as shire, set (in Dor*set*, Somer*set*), ton, ham, stead, and stock, have bequeathed us no word signifying a line of houses, unless it be the word road, and the term chair, commonly used in the town of Newcastle-on-Tyne, for a narrow lane or alley. The Danes have left us traces of their occupation in the word gate, of frequent occurrence in the towns of York and Ripon, derived from the Scandinavian term gata, a street, and not equivalent, as is erroneously supposed, to the English word gate. From the Normans we have row, (i.e. rue, a street), court, alley, terrace, &c. In London, St. Clement Danes, St. Olaves, &c., remind us of the Danes, Addle street (from King Athelstane) of the Saxons, Fleet street, Holborn (i.e. Old Bourne), Tyburn (i.e. brook of the Tye, Marybone (Mary-le-bourne), Upper and Lower Brook street, of the course of the streams; the Sanctuary, of the time when, entrenched in what was once the deep morass of Thorney, or Thorny island, and under the shadow of the holy Abbey, our sovereigns felt most secure in their palace at Westminster. The Strand, with the streets running out of it called after ducal names, Villiers street, Buckingham, Exeter, Cecil, Burleigh, Arundel, Norfolk, and Duke street, of the time when this was the site of the palaces of our nobility, with their gardens extending to the river; while Charing Cross, in memory of Eleanor the beloved queen (la chere reine) of Edward I., recalls one of the most touching scenes of English history.

In Liverpool, Chapel street, Castle street, Tower gardens, and others, might easily be connected with similar associations.

And not only are the names of a nation's provinces, towns, manufactures, and articles of daily sight and use, important to the student of history, in the manner which I have been pointing out, but the whole language of a people is an exponent and type of that people's character, feelings, and thoughts. Many instances will at once occur to any one who thinks of words, which could only belong to a particular people. Thus the French have many words and phrases to which we have no equivalent, merely because we are deficient in the feeling which gives them; and so with other nations. Proverbs and other forms of expression may also illustrate

a nation's character and habits. Thus "Judge not a ship as she lies in the stocks," indicates a maritime nation, while "A pin a day is a groat a year," "A penny saved is a penny gained," "Take care of the pence, and the pounds will take care of themselves," "All is not gold that glitters," savour of a commercial, money-loving people. Many other instances might be taken from other nations besides our own; and the various modes of forming a sentence, the peculiar idioms and common abbreviations prevalent among the inhabitants of different countries, might all be made to serve this same end of illustrating national character. In this way, too, may Philology be made subservient to History.

In short, to quote words far wiser and truer than any I can say, "The great business of Philology is to preserve and uphold the union of the past with the present and future, to secure the records of the human mind from being effaced and disfigured by time, to search out and trace the pedigree of all our thoughts and feelings, and to set forth the whole history of mankind as in a map, with its mountain chains of religion stretching from clime to clime, its streams of poetry, descending from them to fertilize and beautify the vallies, its gardens of art, its groves and forests of philosophy growing along their banks, and all the varieties of custom and manner that gather and settle beside them."

COMMERCE OF THE MEDIAL EAST.

By John Locke, A.B., F.S.S.; Dublin.

(Read 19th February, 1857.)

It is singular and unaccountable how greatly we have neglected the commercial advantages of the countries surrounding the Persian Gulf, which I have designated the Medial East, while trade with the extreme East, even with ultra-Gangetic Empires, has been so zealously promoted. An enterprising traveller has just succeeded in crossing Central Africa, approximating the limit of preceding adventurers, who had started from its Western and Northern shores; and ample returns, though long deferred, may be expected from the seed thus casually sown on a rich soil, where man, like the products of the land wherein he dwells, is a weed in the total absence of all civilized culture. But how little know we of the more contiguous and accessible interior of the Arabian Peninsula, whose twelve millions of people are in urgent need of those distinctive manufactures within our power to import. Sweeping daily around the coast in our ocean steamers, we touch only at one point. There, intrenched in impregnable position upon the salient angle of the peninsula, we have made, nevertheless, no systematic arrangements to penetrate the rich districts of Yemen, lying on our very bounds, and establish intimate alliance with its population, still "men of stature," as the Sabeans of old, and excelling all the other tribes in the fruitfulness of their soil and organization of their industry. What small comparative benefits, in a commercial point of view, have we reaped from the grateful amity of the two Powers, whose influence is paramount throughout Arabia and on the shores of the Persian Gulf—Turkey, to secure whose independence we have lavished so much blood and treasure, and Muscat, whose munificent chief* has frequently reminded us that he does not forget the favours conferred, when British aid confirmed

* He presented to our sailor King, William IV., a seventy-four, completely furnished, and armed with guns of the highest finish.

him on his throne, and swept from the sea the Jowasmi pirates, who menaced the ascendancy, if not, indeed, the very existence of his singular maritime empire. This, (including the fertile plains of the Batna) extends shoreward, with occasional spots of territory, to Cape Delgado, in South Africa, an interval of more than 3,000 miles. The Island of Ormuz, (three centuries ago the almost fabulously wealthy emporium of the Portuguese), and its opposite port of Bender-Abassi (Gombroon), acknowledge his sway. His capital is Muscat, the wealthiest city of Arabia, with the exception, perhaps, of Jidda, on the eastern coast, the principal entrepot for African merchandise and exchange; but he usually resides in Zanzibar, which, under his sagacious rule, has become one of the most fertile islands in the world, and is the principal source of revenue of this distinguished merchant prince.

Now, the most important preliminary to full development of commerce with the medial east is selection of the route best adapted for mercantile communication and imperial convenience, combining shortness of interval with the greatest economy in cost and time of construction. The proposed ship canal across the Isthmus of Suez, even if there did not exist the apparently insurmountable difficulties of exposed portage and shoal water at both termini, yet neither shortens the present route, nor affords facility for opening a single new market. The route within the water-shed of the Orontes and Euphrates, by rail, canal, and navigable river to Busra, which has originated from the genius and travelled experience of Chesney, is now fairly before the public; and if the ancient harbour of Seleucia be improved, or reconstructed conformably with the requirements of modern navigation, the section as far as the great caravan station of Aleppo will undoubtedly form a convenient outlet for eastern traffic, as well as for the products of the valley of the Upper Euphrates, and of those populous districts (chiefly Christian) situate on the southern slopes of the Taurus and Caucasus; and thus far will compensate amply the enterprise of its promoters.* But the Orontes is at least ninety miles out of the direct geographical course between Malta and Busra; and the singularly tortuous line of the Euphrates through the Mesopotamian plains is just the very longest that could well be traced from sea to sea. It is suggested also, that in a

* A considerable detour, however, will be necessary, in order to touch at the populous towns and villages.—See Map of Aleppo Portion.

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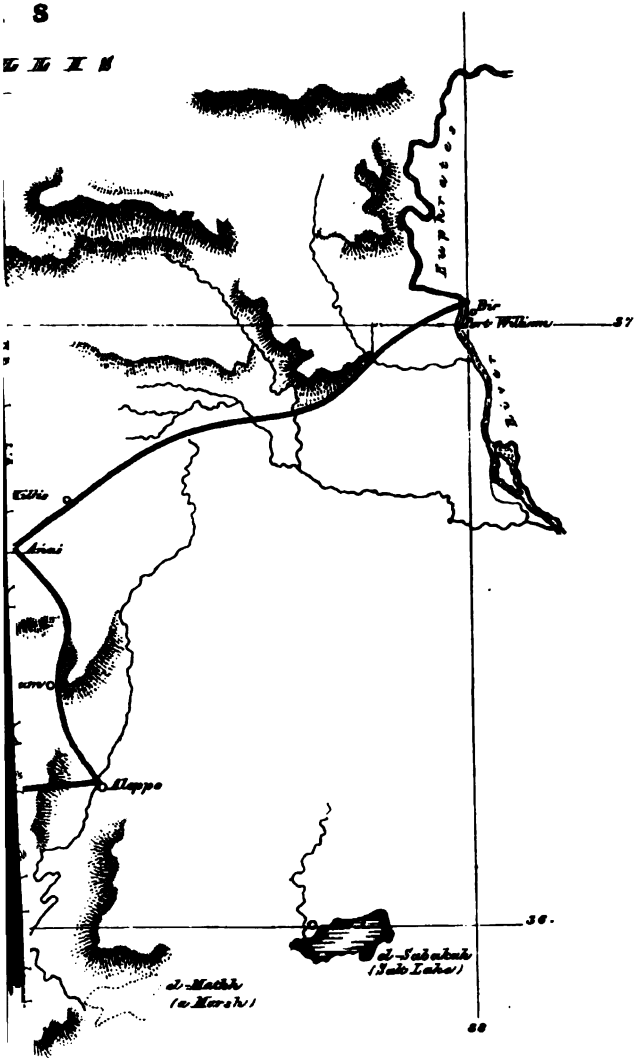

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strategical aspect our great highways of oriental traffic ought, other circumstances alike, to be as far withdrawn as practicable from positions involving complications of policy and rival interests, that might arise hereafter. The deserts of Khorasan constitute a stronger boundary against aggression than seas, or mountains, or embattled walls; and if ever the hordes of northern Autocracy are destined to meet in conflict the merchant "kings of the east," the basin of the Upper Euphrates, or valley of the Jordan, is most likely to become the battle-field. This may not be; such misfortune be afar! But why should we construct a path for possible hostility, if a more southerly route offers superior advantages in shortness and facility of construction; and such a route (less by about 540 miles than that of the Orontes and Euphrates) is suggested from the Bay of Acre to Hilla, and thence by steamer to Busra; the lower reach of the river being comparatively free from those obstructions, the removal of which from the upper stream, in order to render steam navigation practicable, would be a work of many years. It may be observed, also, that both engineering science and financial prudence dictate the commencement of improvement at the embouchure, and thence extending it upwards, according as development of resources justifies additional outlay.

Commencing, then, at Acre, and passing along the foot of Carmel,* through the historic plains of Esdraelon,† the line would cross the Jordan in about the thirty second degree of latitude, and continue on same parallel as direct as the nature of the surface admits to the Euphrates. Burckhardt and Buckingham affirm, that for several days' journey east of Zaele the land is still capable of its ancient culture; water, the principal element of fertility in that climate, being found abundant at a depth of four or five feet. And even beyond this district, in the more intractable desert, small settlements occur, though few and far apart, where, in the midst of scant pastures, vegetables are raised within shelter of the villages, partly for local consumption, and partly for barter with the Bedoween. After crossing the singular oasis of Anna,‡ the line is linked with the Euphrates, traversing in its latter course the route of the great caravans which, 3,000 years ago, travelled between Babylon and Tadmor, when Solomon's short-lived empire was in the zenith of its glory.

* See Maps, which have been expressly prepared for this paper. † Hebrew Jezreel.

‡ The Geological structure is carboniferous, large masses of chalk being scattered over the surface.

Hilla is within traffic* reach of the rich plain enclosed by the bifurcation of the rivers, and it only requires the irrigating canals to be repaired or partly reconstructed, to render the soil as fruitful as of old, when Strabo† described the millet as attaining the height of twelve feet.

Whether the line should be extended (making a detour to avoid the pestilent marshes on the river banks) to some deep harbourage on the Arabian coast, thus linking with the accessions of Arabian commerce the advantage of a more advanced starting-point for India-bound ships, is matter for deferred consideration. The route traced on the accompanying map would border the trading community of the Beni-Shammar, pass through the agricultural districts of the Beni-Tameem, and, touching the great oasis of El-Ahsa, through which the whole traffic of El-Nejd passes to the gulf, cross a narrow strip of sandy waste to some terminus near El-Katif, opposite the pearl coast, and within the spacious portage of Bahrein.

Bearing in mind that this essay is communicated to a learned society, in the first maritime city of the globe, I would deprecate, as inadmissible, the plan of a railway to the Indus along shores, nine-tenths of which are sandy wastes, in preference to a shorter route by steamer.‡ Independently of our ascendancy in Eastern waters, a world-wide experience proves that the ocean is, and must always remain (at least under the present material dispensation), the more suitable highway for the exigencies of commerce; and circumstances do not warrant the expense of constructing a dictinct route for passenger transit.|| The navigation of the gulf is less perilous than that of the Red Sea, and the telegraph rope, linked at Busra with the trans-Syrian wire, and at Currachee with the Indian lines, will lie securely within its depths, forming a stronger and more enduring bond of union with England than the united strength of all her military and naval Forces in the east.

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* The shifting of goods from river steamer to ocean steamer presents the chief objection to this route, which the removal of the bar below Busra, and deepening the river itself could alone obviate. The drainage of the marshes is an almost hopeless task, and yet without it a continued railway to the deep waters of the gulf would be impracticable, except by a detour, such as is shown on the map.

† 350 years before Strabo's time, Alexander beheld these canals with wonder and admiration, steering his boat himself through their intricacies.

‡ It is proposed that the steamers should touch at Gombroon.—See Map.

|| The greater danger of the desert than the ocean passage is as evident now as in the time of Alexander and his admiral, Nearchus.

The difficulties consequent on railway transit through the desert are much exaggerated, while the comparative cheapness and facility of construction are overlooked. The locomotive may assuredly, with equal security and indefinitely greater speed, glide over the weary track than the Camel, and, when water is deficient, can carry larger supplies within its iron maw. The simoom is infrequent, and generally innocuous in so high a latitude; and, in any event, is a thousand times less perilous than the tempests of the Red Sea and Indian Ocean. Those who urge as an insuperable objection the hostility of the Bedoween, forget how speedily, and almost bloodlessly, they were humbled some thirty years ago, by a small British force, despatched into the interior to support our ally the Prince of Muscat. The Turco-Egyptian powers also, on whose friendly co-operation we have claims, as justly earned as they are likely to be cheerfully accorded, exercise a dominant influence over all the wandering tribes.

And even were we in the last resort to be cast on our own unaided resources, the annals of Anglo-Indian empire testify, how easily neutralised is the hostility of populations, sundered amongst themselves by undying traditional feuds. But, indeed, so far from opposition being anticipated in that quarter, we may rather expect that the Arab Nomade, under the impulse of the idiosyncrasy of his natural character, would bow to the power, that born of science is controlled by justice, and guided by the plenty-bearing hand of commerce; and would hail with enthusiastic wonder "the self-moved chariot, instinct with motion"*—as steady and swift it spans the ever-widening circle of his deserts. The benefits necessarily consequent upon thus rolling back, as it were, by a Syro-Arabian railway,† the tides of

* Southey's "Kehama."

† An essay on this subject was contributed by the writer to the Geographical Section of the British Association meeting at Cheltenham last August, and fifteen years ago he suggested the same route, in an essay read before a literary society, and reported, as follows, in the *Limerick Chronicle*:—"The shortest, safest and most convenient road to India may yet be found from Acre to the Euphrates, and thence through the Persian gulf to Bombay; and to prove, that there is little danger to be anticipated from the enmity of the nomadic tribes, we may adduce a singular illustration of the moral ascendancy of England, which, like a magnetic influence, girds the habitable globe. When our exploration steamer, in 1836, ploughed the sluggish waters of the Euphrates, the Arabs gazed in mingled anger and amazement, and poised their lances with hesitating aim; but, having learned through the interpreters that these were British vessels, they dashed their lances into the sands, and galloped to the brink of the river. The gloomy severity of feature relaxed, and the banks of the ancient Stream rang again with cheers of welcome for the English stranger."—*Limerick Chronicle*, Feb. 12, 1842.

oriental traffic to their primæval seat, before De Gama's great discovery, when Arabia was the caravanserai between Europe and Asia, are numerous. The energy and genius of the Arabs for commerce are still the same, as when the Saracenic conquests carried with them their sciences and industries to the utmost boundaries of the west; but these require encouragement and development by extension of European trade, which, especially in the Persian gulf and Oman, would amply reimburse the investments of British enterprise. The greater proportion of the population of Arabia, indeed of all the countries bordering the Persian gulf, as yet intact by any direct British trade, afford inviting opportunity to introduce our manufactures; while India, now profoundly tranquil, from the Himalaya to Comorin, and rounded in the completeness of empire by an improved system of intercommunication, enjoys the distinct and independent advantage of promoting the exchanges of the peculiar products of Hindostan.* The commerce of Eastern Turkey, Northern and Eastern Arabia, Persia, Beloochistan, and Cabool (including the fertile valley of Herat), all tend to the gulf as their natural outlet; and whatever territorial changes may follow from the expedition against Persia, it *must* result, like all our eastern wars, in immense accessions to our foreign trade.

We already possess commerial influence and position at Muscat, Bushire, and Busra; though the trade, even at those towns, is almost exclusively conducted by Parsees, Banyans, Armenians, and native merchants. The new positions suggested as the most suitable entrepots of commerce, and presenting secure harbourage. are Mattara and Sohar in Oman, and El-Katif and Gombroon in the gulf. Mattara, though partially open to the monsoon, is free from the excessive sultriness that renders Muscat† intolerable to Europeans. Sohar is the most convenient outlet for the productions of the numerous oases of the Batna. El-Katif, on the pearl coast, is the principal market for all El-Nejd and El-Ahsa, and between Gombroon and the island of Kishma, the navy of India might ride in safety, and protect the commerce of the Persian gulf.

* When the extensive plains of the Deccan, peculiarly suitable both in soil and climate to the growth of the cotton plant, are made available by railway and river navigation, England may be rendered entirely independent of the slave labour of the United States, for the supply of the most important material of her manufactures. Removing the seat of the market would be the first sure step to the manumission of the slave, independently of the commercial benefit to our Indian empire.

† The κρυπτὸς φοῖνιξ of Ptolemy.

Through these might be borne into the interior districts the cottons, linens, hardware, and pottery of the United Kingdom, besides many other articles of luxury or necessity.

The peculiar products of these countries are too well-known to require enumeration; but some, especially suitable to the soil and climate of Arabia and parts of Persia, may be newly introduced, or their culture largely extended. Of these the principal are tobacco, indigo, cotton, the mulberry, and several of the oil-bearing seeds. The oases too are not cultivated to their natural bounds. What scanty information we possess of the geology of Hadramaut would induce expectation of finding the precious metals, copper, and gems in the eastern Ghauts. Again, the water-sheds of the Lower Euphrates and Tigris enclose the richest soils in the world for growth of hemp and grain; and yet the wheat is allowed to rot in the fields for want of means of transport to Busra, at the very time when a Trieste mercantile firm proposes to convey Baltic breadstuffs half round the globe for supply of the Bushire expedition; at the very time too when the Pasha of Bagdat, a sagacious and liberal governor, who received his education in the Polytechnic School of Paris, invites English residents, and promises them protection and encouragement; well knowing, that security for the merchant and cultivator, and investment of capital under guidance of enlightened enterprise, form the most effectual antidotes to that barren listlessness of habits, which has paralysed during centuries of despotism the industry of the native population.

Incident on the development of new and enlarged sources of trade is the question of reforming our international commercial law, so as to simplify and render its provisions more adapted to their special purposes. This object may be attained through the instrumentality of mixed courts of British and natives at the principal ports, and with greater facility and success also, where British influence is single and supreme, than under the complicated and mutually obstructive commercial polity of European states.

The telegraph, the railway, and the steamer may be said, for all practical purposes, to annihilate geographical boundaries, and uproot those moral antagonisms of races, which have been so long cherished by despots, to secure the ends of their unscrupulous covetousness and short-sighted ambition. It needs only that peoples should know each other, in order to discern that their real interests are identical. Besides the multifarious

advantages resulting to commerce from the iron link between the Mediterranean and the Persian gulf, we may look, also, for ultimate consequences of a deeper and more enduring nature; and of these the principal are,—the suppression of slavery in the medial East, and the gradual resettlement of the Jews in Palestine. The multitudes of this ancient people, scattered through many lands, have ever been loyal as subjects, and industrious as men. The valleys of their once pleasant land, and the hills, formerly terraced to their summits with culture, lie "barren and waste without inhabitant"; and the immigration of a thrifty and peace-loving people would tend alike to the increase of the ruler's revenue, and the welfare of his subjects. Nor would the descendants of the elder-born of Abraham, who, unchanged in character and unbroken by conquest, have never left their primitive seats, remain unaffected by western contact and associations; for the Arabian Nomades must, soon or late, receive the impress of that Christian civilization, which, in conjunction with popular freedom, has made a few European nations, and their colonists, the prevailing arbiters of the human race.

What solemn and startling reflections are awakened in consideration of this subject. The electric telegraph, faintly typifying the omnipresence of Him, who once made Israel his dwelling-place. The steam-car, wonder of modern science, swiftly rolling through the valley of Jezreel, where the prophet of old saw, pourtrayed in vision, the dread final struggle between the powers of Good and Evil—touching so many scenes, hallowed by divine footsteps—and terminating its career at those desert mounds on the Euphrates, beneath which lies buried the earliest and most famous city of the past.

ON THE PERFECT r-PARTITIONS OF $r^2 - r + 1$.

By the Rev. Thomas P. Kirkman, A.M., F.R.S., Rector of Croft with Southworth, and Honorary Member of the Literary and Philosophical Society of Manchester.

(Read 21st May, 1857.)

Some years ago a question was proposed in the Ladies' and Gentlemen's Diary, which is not likely soon to be answered: "To determine the number of combinations of q together that can be made with n symbols, so that every combination of r symbols shall be m times and m times only employed."

The little that has been done towards the solution may be seen in some papers of mine in the second fifth and eighth volumes of the Cambridge and Dublin Mathematical Journal, and in two memoirs in the seventh and eighth volumes, by the late Mr. Anstice. That author has there given a properly *mathematical* discussion of a puzzle proposed by me several years before, which, as I happened to learn the other day in London, is still going round as a riddle of reputation, in circles to which it never looked to be admitted: *to make a school of fifteen young ladies all walk out in threes together, for seven successive days, so that no two shall walk twice together.* The way to do this presented itself at first by accident in the course of some investigations in combinations; but the *theory* of the solution was never unravelled till Mr. Anstice's learned papers appeared.

Questions of this nature have a high mathematical interest, and are not without their practical, and even their commercial value.

Their analytical interest arises hence; that it is exceedingly difficult to state *in algebraic language* the conditions of a *purely tactical* problem. The elements to be combined in these questions have no property except that of diversity. They have no arithmetical value or capacity, except that they can be counted. No operation of addition, subtraction, multiplication, or division can be performed upon them. They can merely be combined. A *tactic calculus* may one day be discovered, by which these problems shall be controlled; but all this is yet part of the sublime

unknown. We can do nothing effectual till then with the analysis thus far in our hands, unless we can contrive to transform the *tactic* into *arithmetic*.

There has been a day when the theorems I am about to give had a high commercial, or rather financial value, and for anything I know they may have it now.

Some years ago the promoters of a foreign lottery would have been gainers if they could have bought, for a large sum, even a partial answer to the question above quoted from the Ladies' and Gentlemen's Diary. They sold tickets, each stamped with a different combination, say of seven numbers. On the day of drawing or decision of prizes, seven numbers were drawn one by one out of an urn: this completed the drawing. The holder of the ticket on which those seven drawn numbers were printed, won the head prize; all those who had six of them on their tickets received a prize next in value; they who had five of them gained a lower prize, and so on; the lowest prizes being taken by all those persons who had on their tickets any two of the seven drawn numbers.

It was evidently of great importance to the promoters of the lottery, that they should not sell more of one combination than another, in order to equalise their own chances. They were consequently put to great expense in packing their tickets, and a great number of hands were employed by them for a length of time to make such combinations by trial as would suit the end proposed.

The problem which I consider in this paper is the following:—To form r-plets with n symbols, so that all possible duads shall be once and once only employed, and so that the r-plets shall be deducible all from any one by successive additions of the r-plet 1111...; that is, by cyclical permutation in every place; e being always set down for $n + e$.

For example, it has long been known, that triads can be so formed with seven symbols in two ways;

1	2	4	1	2	6
2	3	5	2	3	0
3	4	6	3	4	1
4	5	0	4	5	2
5	6	1	5	6	3
6	0	2	6	0	4
0	1	3	0	1	5

In either of these arrangements, every triad is formed from the preceding by addition of 111; e being always set down instead of $7+e$; and every duad in either is once and once only employed.

The symbols chosen here are the seven numbers, 1 2 3 4 5 6 0; but it is evident that they have herein no arithmetical attributes. Seven names or letters, or seven bits of glass, would give the answer equally well.

We are first to find an algebraic or arithmetical expression of the condition.

Let the r vertical columns,

$$\begin{array}{cccc} a, & b, & c, & d \ldots \\ 1+a, & 1+b, & 1+c, & 1+d \ldots \\ 2+a, & 2+b, & 2+c, & 2+d \ldots \\ \cdot & \cdot & \cdot & \cdot \ldots \\ \cdot & \cdot & \cdot & \cdot \ldots \\ \cdot & \cdot & \cdot & \cdot \ldots \end{array}$$

be the arrangement required of our n symbols, 1 2 3 4 . . . . n. It is necessary that the duad $(m, m+i)$ should occur in some horizontal line. Now, wherever this may be, these numbers will be read thus, between two other lines,

$$\begin{array}{ll} m-1 \ldots\ldots & m+i-1 \ldots \\ m \ldots\ldots & m+i \ldots \\ m+1 \ldots\ldots & m+i+1 \ldots \end{array}$$

And it is evident that every pair of numbers in those two vertical columns will have i for their difference. The difference between two columns is the sum of those of the intervening column. Thus, for example,

$$d-a=(b-a)+(c-b)+(d-c)$$
$$(d+\theta)-(a+\theta)=(b-a)+(c-b)+(d-c).$$

It is required therefore that i be the sum of the differences of the numbers that stand over and between m and $m+i$ at the head of the arrangement. That is, every number i from 1 to $n-1$, must be the sum one or more *contiguous elements* of the series

$$b-a,\ c-b,\ d-c,\ \&c.,$$

or, at least, these contiguous elements must make up $An+i$, for which it is always to be understood that i is set down.

Let $\alpha\ \beta\ \gamma\ \delta \ldots \rho$ be this series. Our problem is now transformed to this: to find a series of r numbers $\alpha\ \beta\ \gamma\ \delta \ldots \rho$ such that every

number i from 1 to $n-1$ shall be the sum of certain contiguous ones, one or more, in this series. One of these must be unity, and the sum of the rest must be $n-1$, the least and highest values of i; for the duad $1n$ must appear somewhere. Therefore we must have

$$\alpha+\beta+\gamma+\ .\ .\ +\rho=n; \qquad \text{(a)}$$

and the following identity expresses the rest of our conditions;

$$\begin{array}{lllll}
\alpha & +\beta & +\gamma & +\ .\ .\ .\ . & +\rho \\
+\alpha+\beta & +\beta+\gamma & +\gamma+\delta & +\ .\ .\ .\ . & +\rho+\alpha \\
+\alpha+\beta+\gamma & +\beta+\gamma+\delta & +\gamma+\delta+\epsilon & +\ .\ .\ .\ . & +\rho+\alpha+\beta \\
+\alpha+\beta+\gamma+\delta & +\ \&c. & & & \\
=1+2+3+\ .\ .\ +n-1, & & & & \qquad \text{(A.)}
\end{array}$$

The $n-1$ numbers on the left being, in some unknown order, exactly the $n-1$ numbers on the right; and the r-plet $\alpha+\beta+\gamma+\ .\ .\ +\rho=n$ not appearing.

It is easily proved that the only possible value of n is

$$n=r^2-r+1;$$

for α heads a column of $r-1$ numbers, β a column of as many, γ one of as many, &c.; so that there are $r(r-1)$ numbers on the left hand of the equation, which are none other than the numbers $1\ 2\ .\ .\ n-1$; *i. e.*,

$$r(r-1)=n-1.$$

Since the numbers in the two members of (A) are the same identically, we have

$$\begin{array}{lllll}
\alpha^m & +\beta^m & +\gamma^m & +\ .\ .\ .\ . & +\rho^m \\
+(\alpha+\beta)^m & +(\beta+\gamma)^m & +(\gamma+\delta)^m & +\ .\ .\ .\ . & +(\rho+\alpha)^m \\
+(\alpha+\beta+\gamma)^m & +\ \&c. & & & \\
=1^m+2^m+3^m\ .\ .\ +(n-1)^m; & & & & \qquad \text{(A')}
\end{array}$$

which is true for all values of m.

The problem before us is thus reduced to the finding the r numbers which satisfy the equations A and a. It may be stated thus: *to find the perfect r-partitions of* r^2-r+1. Any r numbers that satisfy (a) form an r-partition of n; and if they satisfy (A), I call the partition *perfect*, because every number $1\ 2\ 3\ .\ .\ n$ is made up by sums of contiguous elements, one or more, of the partition; using the word *perfect* in a sense analogous to what is understood in *a perfect number*, *i. e.*, one which is equal to the sum of all its divisors.

We have equations in abundance for the determination of $\alpha\ \beta\ \gamma\ .\ .\ .$

The $r-1$ equations (A') made by giving to m any $r-1$ positive values; together with (a), are sufficient for the elimination of all the unknowns but one, α, which will give a resulting equation $U=O$, among whose roots will be all the sought numbers, because they are similarly, though not symmetrically, involved in (A'). The exchange of any value used of m for one not used will give us a second system from which all the unknowns but three can be eliminated, and a result $U'=O$, which will likewise have all the sought numbers among its roots. The common factor $V=O$ of U' and U being found, the numbers $\alpha\ \beta\ \gamma\ \ldots$ can be obtained by the solution of $V=O$, or proved to be impossible.

If there should be more sets of values $\alpha\ \beta\ \gamma\ \ldots$ than one, that is, if n has more than one perfect r-partition, we shall thus obtain them all. There will still be a tactical problem for solution, which is the arrangement of the elements, all roots of $V=O$, in the required order; but this will evidently, unless r be a large number, be a matter of very little difficulty. And we shall presently see, that if one perfect partition can be found, others, and most likely all the others, can be easily deduced from it.

Our problem is thus, in theory, completely solved, with the exception of the arrangement of the elements of the partitions just mentioned. And in all cases, if the problem is impossible, we can demonstrate the impossibility.

I doubt whether it is practicable completely to transform *tactic* into *arithmetic:* there will probably be, in every solution of such problems as these, a tactic element, if the problem be definite, which cannot be eliminated. Whether this be so or not, the analysis and transformation just given are, so far as I know, the first instance of a purely tactical problem being brought *completely* under the dominion of Algebra. For, saving the researches of Mr. Anstice, I know nothing in analysis or arithmetic that resembles this investigation, except the theory of magic squares and cubes, the problems in which are not purely tactical, because the results can be tested only by arithmetic. And the admirable researches of Mr. Anstice upon arrangements of triplets do not, so far as I see, either exhaust the solutions or supply a test of their impossibility.

The length of the operations indicated in the above reasoning has naturally deterred me from any application. The results that I have

obtained have been by a tentative process. But I think it likely that any industrious student who may attempt the solution of (A) will find simplifications presenting themselves that may lead to valuable theorems.

A perfect partition being found, it is to be used as *a difference circle*, or key to the formation of the r-plets required.

Thus 1 2 4 is a perfect partition of 7, and may be employed in a difference circle in two ways, thus:—

1	2	4
0	1	3
1	2	4
	&c.	

1	4	2
0	1	5
1	2	6
	&c.	

are the two arrangements of 7 things which have no triad in common, and are seen to be different sets by inspection of the triads 0 1 3 and 0 1 5, from which the others are derivable by addition of 1 1 1.

It is easily proved, that if a perfect partition of n have its elements all multiplied by any number e prime to n, the result, though not always a partition of n, is yet always a difference circle as efficient as before the multiplication. For if every term in equation (A) be multiplied by e prime to n, there will still be on both sides the equation the same $n-1$ numbers 1 2 ; . . $n-1$, if the residues only to modulus n are set down. If this is not so, we shall have some two products alike; that is,

$$e(\alpha+\beta+\gamma+\ .) = An+\theta$$
$$e(\alpha'+\beta'+\gamma'+\ .\ .) = A'n+\theta\ .\ ,$$
$$e\{\alpha+\beta+\gamma\ .\ .\ -(\alpha'+\beta'+\gamma'+\ .)\} = (A-A')n,$$

or, since e is prime to n,

$$(\alpha+\beta+\gamma\ .\ .\ .) - (\alpha+\beta+\gamma+\ .\ .) = A''n,$$

i. e., the difference of two numbers, either of which is less than n, is a multiple of n, which is absurd. Wherefore the proposition is established. This is easily verified by multiplying 1 2 4 by 2, 3, 4, or 6. Thus, always throwing away the sevens,

$(2\cdot1,\ 2\cdot2,\ 2\cdot4) = 2,\ 4,\ 1$, as before
$(3\cdot1,\ 3\cdot2,\ 3\cdot4) = 3,\ 6,\ 5, = (3+6,\ 6+5,\ 5+3) = (2,\ 4,\ 1,)$
$(4\cdot1,\ 4\cdot2,\ 4\cdot4) = 4,\ 1,\ 2,$
$(5\cdot1,\ 5\cdot2,\ 5\cdot4) = (5,\ 3,\ 6) = (5+3,\ 3+6,\ 6+5) = (1,\ 2,\ 4)$
$(6\cdot1,\ 6\cdot2,\ 6\cdot4) = (6,\ 5,\ 3) = (6+5,\ 5+3,\ 3+6) = (4,\ 1,\ 2).$

The identity of the difference circles 1 2 4 and 3 6 5 consists in this, that either of them can be made to take the form of the other, by setting down, instead of single elements, syllables of contiguous elements; thus 1 2 4 is

$$(1+2,\ 2+4,\ 4+1) = 3,\ 6,\ 5, \text{ and}$$

3 6 5 is $$(3+6,\ 6+5,\ 5+3) = 2,\ 4,\ 1.$$

And by virtue of this identity they will both give the same arrangements of triads. Thus using 3 6 5 for our difference circle instead of 1 2 4, we obtain the same two sets of triads as before;

3	6	5
0	3	2
1	4	3
2	5	4
3	6	5
4	0	6
5	1	0
6	2	1

3	5	6
0	3	1
1	4	2
2	5	3
3	6	4
4	0	5
5	1	6
6	2	0

If C stands for the circle 1 2 4, we may represent the above results by the equations (to modulus 7),

$$2C = C, \text{ whence follows}$$
$$4C = C,$$
$$\text{and } 3C = C, \text{ whence follows}$$
$$2 \cdot 3C = C = 6C$$
$$4 \cdot 3C = C = 5C;$$

the truth of which depends on the fact that every number below seven is of the form $2^a\ 3^b$ to modulus 7, thus—

2.3^0, $2^1 3^0$, $2^0 3^1$, $2^2 3^0$, $2^2 3^1$, 2.3^1, are (to modulus 7) the numbers 1, 2, 3, 4, 5, 6. Or since

$$3 = -2^2, \text{ (modulus 7)}$$

all those six numbers are of the form $\pm 2^m$ to that modulus.

It is readily found by trial that 1 2 6 4 is a perfect partition of 13. It becomes a matter of interest to examine whether the difference circles obtained by multiplying this by the successive numbers 2, 3, . . . 12, will be the same or different circles. Now

$$2(1,\ 2,\ 6,\ 4) = 2,\ 4,\ 12,\ 8$$
$$3(1,\ 2,\ 6,\ 4,) = 3,\ 6,\ 5,\ 12.$$

The circle 3 6 5 12 is 1 2 6 4, because

$$(3, 6, 5, 12) = (1 + 2, 6, 4 + 1, 2 + 6 + 4), \text{ and}$$
$$(1, 2, 6, 4) = (3 + 6 + 5, 12 + 3, 6, 5 + 12);$$

but 2 and 4 are contiguous elements in 2, 4, 12, 8, and non-contiguous in 1, 2, 6, 4; wherefore these circles are not the same. In fact 2, 4, 12, 8, transformed *by a regular course about it*, to shew syllables whose sum is 13, is

$$(2, 4 + 12, 8 + 2 + 4, 12 + 8) = 2, 3, 1, 7;$$

and cannot be thrown into four *syllables* by a regular circuit, whose values are 1, 2, 6, 4. Also,

$$2(2, 3, 1, 7) = 4, 6, 2, 1.$$

If C stand for 1 2 6 4, and D for (2, 4, 12, 8 =) 1 7 2 3, we have thus—

$$2C = D,$$
$$2D = C, \text{ whence}$$
$$2^2 C = C, \; 2^2 D = D.$$

This is a remarkable solution of the functional equation

$$\phi^2 x = x, \text{ where}$$
$$\phi x \text{ is neither } x \text{ nor } -x.$$

From the equations, above proved,

$$2C = D, \; 2D = C, \; 3C = C = 4C$$

follow $2^{2m} 3^k C = C$, $\qquad 2^{2m} 3^k D = D$

$2^{2m+1} 3^k C = D$; $\qquad 2^{2m+1} 3^k D = C$;

Now all the numbers

1, 3, 4, 9, 10, 12 are of the form $2^{2m} 3^k$

and 2, 5, 6, 7, 8, 11 are of the form $2^{2m+1} 3^k$,

to modulus 13. It follows that if the circle 1 2 6 4 be multiplied by any of the former six numbers, it remains unaltered, and if by any of the latter six, it becomes 1 7 2 3.

And no other circle can be deduced by such multiplication from either of these. This does not prove that no other perfect partition of 13 exists; but it is easy to see that no more are possible, from the consideration that both 1 and 2 must be elements in every perfect partition, and that no sum of unlike figures greater than 2 can have a sum = 10, except 6, 4 and 7, 3.

We can therefore make four and only four arrangements of quadruplets

with 13 symbols, so as to exhaust the duads once and once only. These are obtained from the difference circles, thus:—

1	2	6	4	1	4	6	2	1	7	2	3	1	3	2	7
0	1	3	9	0	1	5	11	0	1	8	10	0	1	4	6
1	2	4	10	1	2	6	12	1	2	9	11	1	2	5	7
2	3	5	11	2	3	7	0	2	3	10	12	2	3	6	8
3	4	6	12	3	4	8	1	3	4	11	0	3	4	7	9
4	5	7	0	4	5	9	2	4	5	12	1	4	5	8	10
5	6	8	1	5	6	10	3	5	6	0	2	5	6	9	11
6	7	9	2	6	7	11	4	6	7	1	3	6	7	10	12
7	8	10	3	7	8	12	5	7	8	2	4	7	8	11	0
8	9	11	4	8	9	0	6	8	9	3	5	8	9	12	1
9	10	12	5	9	10	1	7	9	10	4	6	9	10	0	2
10	11	0	6	10	11	2	8	10	11	5	7	10	11	1	3
11	12	1	7	11	12	3	9	11	12	6	8	11	12	2	4
12	0	2	8	12	0	4	10	12	0	7	9	12	0	3	5

In these arrangements no triad is repeated. And I think it will be found impossible to form another quadruplet which shall not contain a triad before employed.

These results might be thrown into the shape of an amusing puzzle thus:—

A invites a family of 13 persons to dine with him, four at once, so long as no two shall dine together a second time. They manage to eat 13 dinners. *A* continues his invitation to the same family to dine with him four at once, so long as no three, reckoning from the first invitation, shall dine a second time together. They manage to eat 39 more dinners. How did they arrange themselves, and contrive it also in such a manner, that every member of the family ate the same number of dinners?

In a memoir in the fifth volume of the Cambridge and Dublin Journal, I have proved that, whenever r is prime, $r^2 + r + 1$ symbols can be arranged in $(r + 1)$-plets, so that every duad shall be once employed and once only; but the method given of forming the multiplets is not so elegant as this deduced from the difference circles here discussed. It was a matter of surprise to me to discover by accident a perfect partition of $21 = 4^2 + 4 + 1$, thus proving that r needs not be prime. This partition is 1, 3, 10, 2, 5.

All the numbers prime to 21 are of the form 5.2^a, *i. e.*, $\pm 2^a$, to modulus 21. If then this difference circle is unchanged by multiplication by 2, or 5, we know that no multiplier can change it. Now

$$2(1, 3, 10, 2, 5) = (2, 6, 20, 4, 10)$$
$$= (2, 5 + 1, 3 + 10 + 2 + 5, 1 + 3, 10);$$
$$5.(1, 3, 10, 2, 5) = (5, 15, 8, 10, 4)$$
$$= (5, 2 + 10 + 3, 1 + 5 + 2, 10, 3 + 1);$$

which are evidently the same circle 1, 3, 10, 2, 5. We conclude that no other perfect partition of 21 can be deduced from this one. But this does not prove that no other exists.

We know, however, that if 1,2 be not contiguous in a perfect partition, it must contain 3; and that if 1,2 be contiguous, it cannot contain 3. And it is easily proved, by examination of the 5-partitions of 21 that have five different elements, that no perfect one exists except 1, 3, 10, 2, 5.

There are thus only two ways of arranging 21 things in 5-plets, so as to exhaust the duads once and once only.

1	3	10	2	5
0	1	4	14	16
1	2	5	15	17
2	3	6	16	18
3	4	7	17	19
4	5	8	18	20
5	6	9	19	0
6	7	10	20	1
7	8	11	0	2
8	9	12	1	3
9	10	13	2	4
10	11	14	3	5
11	12	15	4	6
12	13	16	5	7
13	14	17	6	8
14	15	18	7	9
15	16	19	8	10
16	17	20	9	11
17	18	0	10	12
18	19	1	11	13
19	20	2	12	14
20	0	3	13	15

1	5	2	10	3
0	1	6	8	18
1	2	7	9	19
2	3	8	10	20
3	4	9	11	0
4	5	10	12	1
5	6	11	13	2
6	7	12	14	3
7	8	13	15	4
8	9	14	16	5
9	10	15	17	6
10	11	16	18	7
11	12	17	19	8
12	13	18	20	9
13	14	19	0	10
14	15	20	1	11
15	16	0	2	12
16	17	1	3	13
17	18	2	4	14
18	19	3	5	15
19	29	4	6	16
20	0	5	7	17

In these no triad is repeated, and I think no 5-plet can be formed beside without repeating a triad.

I found a perfect partition of 31 by chance, simply by writing 2 2 2 2 2 under 1 3 10 2 5, which gave me 3 5 12 4 7, and this by a small change became 2, 1, 5, 12, 4, 7, a perfect partition, exhibiting the numbers 1 2 3 . . . . 30 in the proper form, thus:—

1, 2, 2 + 1, 4, 5, 1 + 5, 7, 2 + 1 + 5, 2 + 7, 1 + 2 + 7, 4 + 7, 12, 4 + 7 + 2, 4 + 7 + 2 + 1, 7 + 2 + 1 + 5, 12 + 4, &c., the remaining numbers being simply the complements of those here written.

To examine whether we can obtain from this any other perfect partition, we write

$$2\,(2, 1, 5, 12, 4, 7) = (4, 2, 10, 24, 8, 14)$$

which we see at once to be a new circle, because 2 and 4 on the right are contiguous syllables; it is, in fact, reduced to syllables whose sum is 31,

$$(14, 4, 2, 10 + 4, 8 + 14 + 4 + 2 + 10, 24 + 8,) = 14, 4, 2, 3, 7, 1.$$

Next,

$$3\,(2, 1, 5, 12, 4, 7) = (6, 3, 15, 5, 12, 21);$$

this has 2 + 1, 5 contiguous on one side, and 3 . . 5 non-contiguous on the other; we have therefore two partitions before us, and the new one is—

$$(6, 3, 15 + 5 + 12, 21 + 6 + 3 + 15, 5, 12 + 21) = (6, 3, 1, 14, 5, 2).$$

Again,

$$4\,(2, 1, 5, 12, 4, 7) = (8, 4, 20, 17, 16, 28),$$

showing different partitions, by 2 + 1 + 5, 4 non-contiguous on the left, and 8, 4 contiguous on the right. The new one is—

$$(8 + 4 + 20, 17 + 16, 28 + 8, 4, 20 + 17, 16 + 28) = (1, 2, 5, 4, 6, 13).$$

The next step is—

$$5\,(2, 1, 5, 12, 4, 7) = (10, 5, 25, 29, 20, 4)$$

a repetition of our first difference circle; for it is simply

$$(7 + 2 + 1, 5, 12 + 4 + 7 + 2, 1 + 5 + 12 + 4 + 7, 2 + 1 + 5 + 12, 4).$$

We need not try 6 times; for if

$$5C = C$$

it must follow from

$$6 \cdot 5C + C = 31C = 0, \text{ to modulus } 31,$$

$$\text{that } 6 \cdot 5C = -C = -5C,$$

$$\text{or } 6 \cdot C = -C,$$

i. e., $6C$ can differ from C only in sign, or it must be the same circle read backwards. And, in fact,

$$6 \cdot (2, 1, 5, 12, 4, 7) = (12, 6, 30, 10, 24, 11)$$
$$= (12, 6+30, 10+24+11+12+6, 30+10+24, 11+12+6+30+10, 24+11) = (12, 5, 1, 2, 7, 4),$$

our first circle reversed.

Neither is it necessary to try 7 times; for

$$\text{if } 5^2C = C$$
$$4 \cdot 5^2C = 4C, \text{ or}$$
$$7C = 4C,$$

because $4 \cdot 25 = 7$, to modulus 31.

Consequently

$$7(2, 1, 5, 12, 4, 7) = 2(1, 2, 5, 4, 6, 13)$$

as found before from the multiplier 4; and this the reader can readily verify.

The multiplier 8 gives us, since $8C = 2 \cdot 4C$

$$8(2, 1, 5, 12, 4, 7) = 2(1, 2, 5, 4, 6, 13)$$
$$= (2, 4, 10, 8, 12, 26)$$

again a new partition, as seen from the position of the elements 2 and 4. Reduced to syllables whose sum is 31, it becomes

$$(2, 4+10+8+12, 26+2+4, 10, 8, 12+26) = (2, 3, 1, 10, 8, 7).$$

We have proved that

$$C = (2, 1, 5, 12, 4, 7) = 5C = 6C;$$
$$2C = (1, 7, 3, 2, 4, 14)$$
$$3C = (1, 3, 6, 2, 5, 14) = 3 \cdot 5C = -16C;$$
$$4C = (1, 2, 5, 4, 6, 13) = 7C$$
$$8C = (1, 3, 2, 7, 8, 10).$$

There are no more deducible from C, or its multiples, because every number less than 31 is of the form $\pm A2^m$, to modulus 31, when A is either 1 or 3, and m is not greater than 3; for $2^4 = 1$, to that modulus: or as this is usually expressed in the language of equivalences, 2 is a prime root of $x^4 - 1 = 0$ to modulus 31.

From these can be obtained ten different sets of 31 6-plets, each set exhausting all the duads, thus:—

	1	5	12	4	7	2
0	1	6	18	22	29	
1	2	7	19	23	30	
2	3	8	20	24	0	
3	4	9	21	25	1	
4	5	10	22	26	2	
5	6	11	23	27	3	
6	7	12	24	28	4	
7	8	13	25	29	5	
8	9	14	26	30	6	
9	10	15	27	0	7	
10	11	16	28	1	8	
11	12	17	29	2	9	
12	13	18	30	3	10	
13	14	19	0	4	11	
14	15	20	1	5	12	
15	16	21	2	6	13	
16	17	22	3	7	14	
17	18	23	4	8	15	
18	19	24	5	9	16	
19	20	25	6	10	17	
20	21	26	7	11	18	
21	22	27	8	12	19	
22	23	28	9	13	20	
23	24	29	10	14	21	
24	25	30	11	15	22	
25	26	0	12	16	23	
26	27	1	13	17	24	
27	28	2	14	18	25	
28	29	3	15	19	26	
29	30	4	16	20	27	
30	0	5	17	21	28	

	1	2	7	4	12	5
0	1	3	10	14	26	
1	2	4	11	15	27	
2	3	5	12	16	28	
3	4	6	13	17	28	
4	5	7	14	18	30	
5	6	8	15	19	0	
6	7	9	16	20	1	
7	8	10	17	21	2	
8	9	11	18	22	3	
9	10	12	19	23	4	
10	11	13	20	24	5	
11	12	14	21	25	6	
12	13	15	22	26	7	
13	14	16	23	27	8	
14	15	17	24	28	9	
15	16	18	25	29	10	
16	17	19	26	30	11	
17	18	20	27	0	12	
18	19	21	28	1	13	
19	20	22	29	2	14	
20	21	23	30	3	15	
21	22	24	0	4	16	
22	23	25	1	5	17	
23	24	26	2	6	18	
24	25	27	3	7	19	
25	26	28	4	8	20	
26	27	29	5	9	21	
27	28	30	6	10	22	
28	29	0	7	11	23	
29	30	1	8	12	24	
30	0	2	9	13	25	

In the same way eight more sets of sextuplets can be made.

It was first observed by Mr. Anstice, in a letter to me, that as the powers of 2, estimated to modulus 7, give what he calls in his memoirs above quoted a primary triplet 1 2 4, from which others can be cyclically obtained so as to exhaust all the duads in 7 symbols, so the powers of 2, estimated to modulus 73, give a primary 9-plet from which others can be made to exhaust the duads in 73 things. This 9-plet is

1, 2, 4, 8, 16, 32, 64, 55, 37.

It follows that the circle of differences made from these numbers arranged in order of magnitude, viz.:—

$$1, 2, 4, 8, 16, 5, 18, 9, 10,$$

is a perfect 9-partition of 73. This appears from the series

$1, 2, 1+2, 4, 5, 2+4, 1+2+4, 8, 9, 10, 10+1, 4+8, 10+1+2, 2+4+8, 1+2+4+8, 16, 10+1+2+4, 18, 9+10, 9+10+1, 16+5, 9+10+1+2, 5+18, 8+16, 10+1+2+4+8, 9+10+1+2+4, 18+9, 4+8+16, 8+16+5, 2+4+8+16, 1+2+4+8+16, 5+18+9, 4+8+16+5, 9+10+1+2+4+8, 2+4+8+16+5, 1+2+4+18+16+5,$ &c,

the rest of the syllables being the complements of these.

We proceed to examine whether other perfect partitions of 73 can be derived from this.

$$2\,(1, 2, 4, 8, 16, 5, 18, 9, 10) = (2, 4, 8, 16, 32, 10, 36, 18, 20)$$
$$= (2, 4, 8, 16, 5+18+9, 10, 1+2+4+8+16+5, 18, 9+10+1)$$

the same circle still. Putting H for this circle, we can write

$$2H = H = 2^m H.$$

Next,

$$3.H = (3, 6, 12, 24, 48, 15, 54, 27, 30)$$
$$= (3, 6, 12, 24, -25, 15, -19, 27, 30)$$

since $48+25=0=54+19$; (modulus 73)

or $3H = 3, 6, (12+24-25+15-19), (27+30+3+6+12+24-25),$
$(15-19+27+30+3+6+12), (24-25+15),$
$(-19+27), (30+3+6+12+24), (-25+15-19+27+30),$
$= 3, 6, 7, 4, 1, 14, 8, 2, 28,$

a new perfect 9-partition of 73.

The multiplier 4 has the effect of 2, or of 1.

$$5H = (5, 10, 20, -33, 7, 25, 17, -28, -23)$$
$= (5+10+20-33), (7+25+17-28-23+5), (10+20-33+7),$
$(25+17-28-23+5+10), (20-33+7+25+17-28),$
$(-23+5+10+20-33+7+25), (17-28-23+5+10+20),$
$(-33+7+25+17), ((-28-23=)22)$
$= (2, 3, 4, 6, 8, 11, 1, 16, 22)$ 1,

which is a third perfect 9-partition of 73.

Now, $6H = 3 \cdot 2H = 3H$, already found;

$7H = 5 \cdot 2^4 H = 5H$, just found;

$$9H = -64H = -2^6H = -H,$$

the reverse of our circle H;

We have next to examine $11H$;

$$\begin{aligned}11H &= (11, 22, -29, 15, 30, -18, -21, 26, 37)\\ &= (11+22-29), (15+30-18-21), (26+37+11),\\ &\quad (22-29+15), (30-18), (-21+26+37+11+22),\\ &\quad (-29+15+30-18-21+26), (37+11+22-29+15+30)\\ &\quad (-18-21+26+37),\\ &= (4, 6, 1, 8, 12, 2, 3, 13, 24),\end{aligned}$$

the fourth perfect 9-partiton of 73.

There are no more than these three, $3H$, $5H$, and $11H$, deducible from H by any multiplier prime to 73, that is by any of the numbers 1 2 3 . . . 72; for these are all of the forms, 18 of each form,

$$\pm 2^m, \pm 3\cdot 2^m, \pm 5\cdot 2^m, \text{ or } \pm 11\cdot 2^m, \text{ to modulus } 73,$$

as may easily be verified. Consequently the multiplication of H by any of these numbers will have the effect of multiplication by 1, 3, 5, or 11, taken either with positive or negative sign.

And if we multiply any of the three difference circles $3H$, $5H$, or $11H$ by any number prime to 73, we shall merely reproduce one of the four circles

$$\begin{aligned}H &= (1, 2, 4, 8, 16, 5, 18, 9, 10),\\ 3H &= (1, 4, 7, 6, 3, 28, 2, 8, 14),\\ 5H &= (1, 16, 22, 2, 3, 4, 6, 8, 11),\\ 11H &= (1, 8, 12, 2, 3, 13, 24, 4, 6).\end{aligned}$$

Whether there be any other perfect 9-partitions of 73 besides these, it is not easy to prove by a simple argument. It is enough for theory that we have the power to determine this by the solution of equation (A), as pointed out in the former part of this memoir.

The four difference circles above found enable us to form, in eight different ways, 73 9-plets, each set exhausting once and once only the duads possible with 73 symbols, 1, 2, 3, . . . 72, 0, thus:—

1	2	4	8	16	5	18	9	10
0	1	3	7	15	31	36	59	63
1	2	4	8	16	32	37	55	64
2	3	5	9	17	33	38	56	65
	&c.							

	1	10	9	18	5	16	8	4	2
0	1	11	20	38	43	59	67	71	
1	2	12	21	39	44	60	68	72	
2	3	13	22	40	45	61	69	0	

&c.

	1	4	7	6	3	28	2	8	14
0	1	5	12	18	21	49	51	59	
1	2	6	13	19	22	50	52	60	
2	3	7	14	20	23	51	53	61	

&c.

	1	14	8	2	28	3	6	7	4
0	1	15	23	25	53	56	62	69	
1	2	16	24	26	54	57	63	70	
2	3	17	25	27	55	58	64	71	

&c.

And four more sets can be made in like manner from the remaining two difference circles.

It may be an amusement to the reader, whether mathematical or not, to seek for the perfect r-partitions of, ($r = 7, 8, 10$, &c),

$$43 = 7^2 - 7 + 1$$
$$57 = 8^2 - 8 + 1$$
$$91 = 10^2 - 10 + 1$$

&c.

I cannot demonstrate that none exists for 43; but I think it improbable. That one and more than one can be found for 57 I think is very likely; for I have proved, in a paper before alluded to in the Cambridge and Dublin Journal, that octuplets can be made to exhaust the duads in $57 = 7^2 + 7 + 1$, because 7 is prime. And I do not see why decuplets should not be discovered for 91. If there be a general expression for these perfect partitions, it will in all probability be a complex and discontinuous function of r.

ON THE HISTORY OF THE ENGLISH LANGUAGE.

By Thomas Wright, Esq., M.A., F.S.A.

(Read 23rd April, 1857.)

I think few will deny that our attention could hardly be called to a more interesting or important subject than that of the language we speak. Language is in a manner the index of our existence, it is intimately connected with all our domestic relations as well as with our relations to other peoples, and the history of our own language is specially to us that of ourselves as a race of mankind. We have reason, therefore, to be surprised that it is a subject with which people in general are little acquainted, and that it has hitherto been taught so imperfectly and so incorrectly in our ordinary course of education; and this I am sure you will accept as my excuse for taking it for my subject on the present occasion.

Some fifteen centuries ago, a great portion of Europe was absorbed in the vast empire of Rome, which included this island, with the exception of the wild districts of the extreme north, and which on the continent had a varying frontier extending from the Rhine to the Danube. With few exceptions, such as those of the Armoricans and the Aquitanians (represented by the modern population of Britany and the Basque countries) and that of Greece, Rome had imposed her own language upon the conquered provinces, and at the time of which I am speaking, the population of as much of western Europe as formed part of the empire, spoke generally the Latin tongue. I believe that this was strictly the case with the Roman province of Britain, and that nearly four hundred years of uninterrupted occupation, with a current of recruits of all sorts to the colonists, perhaps in proportion more continual even than that in modern times of the United States of America, had entirely effaced the primitive character of its population. The Celtic race, driven everywhere before the civilization of Rome or the hostility of the Teutons, had found its last refuge to the West in Ireland, and I am inclined to think that we must look to the Irish language as the real representative of the Celtic dialects which were spoken in Britain before its occupation by the Romans. It appears to me most probable that the population of the North of Scotland was Teutonic—German or Scandinavian. On the

Continent, the vast sweep of territory to the north of the Roman frontier, in nearly its whole extent, was occupied by the great Teutonic race, in its various divisions of high German, in which the Goths were included, Low German, occupying the countries in the west up to the Danish peninsula, and Scandinavian, which included the Danes and the Swedes, the Norwegians, and North-western islanders—in fact, the Northmen.

It is no part of my plan to enter further into the divisions of the Teutonic race on the Continent, or into their relations with the empire. You all know that the Teutons eventually overrun and conquered the Roman provinces, and that three distinct tribes of the Low Germans,—the Angles, the Saxons, and the Jutes,—made themselves masters of Britain. The establishment of the Teutons in the Roman provinces brought with it a change of language, as well as of manners and political feelings, on one part or the other, according to a variety of circumstances into which I will not now enter. On the Continent, over nearly the whole extent of the western empire, the modern languages are derived from the Latin, and were known during the whole period of the middle ages by the name of Roman. In England the Teutonic language completely superseded the Latin, for several causes, of which one was no doubt the circumstance, that for a long period previous to the final breaking up of the western empire, the population of Britain had been continually and largely increased by the immigration of German settlers, so that the German spirit was far more powerful than the Roman.

The notion will naturally suggest itself to you, that, as three different Teutonic peoples conquered the island of Britain, they must have imported into it three languages instead of one. This notion, however, is only correct in a certain sense; for the languages talked by the different German tribes, or states, had not at that time so far diverged in form as to hinder them from easily intermixing and coalescing. The different branches of the Low Germans could not only understand one another with perfect ease, but they could probably intercommunicate with their next neighbours, either of the high German tongue or of the Scandinavian, with at least as little difficulty as at the present day a Lancashire peasant would discourse with a Yorkshireman. In fact, what are now distinct languages were then represented only by cognate dialects. There can be no doubt that there was a strong difference of dialect, from the earliest period of their settlement in this island, between the languages spoken by the Angles, the

Saxons, and the Jutes, and these divisions were the foundations of the great classes of the modern dialects of England. The Jutes, represented chiefly by the kingdom of Kent, were the least numerous of the three Teutonic peoples of Britain, and, although, probably from their position, they had at an early period attained to a great degree of commercial prosperity, riches, and power, they exercised no permanent influence, either political or much less literary, on the great Anglo-Saxon confederacy. It was the Angles, who were numerically by far the most powerful of the Teutonic settlers, who first took the lead in intelligence and in literature. The earliest literary productions of the Anglo-Saxons, and the oldest Anglo-Saxon traditions known, appear to belong chiefly to the family of the Angles, and their influence over the rest was so great, that not only did these accept from them the general title of *Englisc*, but even the nations of the continent who had preserved the Roman language, generally agreed in giving to the Teutonic population of Britain the name of *Angli*. Thus we derive from this one branch of the triple composition of our race the national name of which we are proud, that of Englishmen, and it is from them that our language was called ENGLISH. Nevertheless, the Anglian division of the race fell in the course of the eighth century under the superior influence of the Saxons, and Wessex, or the kingdom of the West-Saxons, not only gave us finally our line of kings, but furnished us with the model of our language and literature. The written English language of the present day is founded upon that dialect in which King Alfred wrote, and which held in Saxon England somewhat the same position as the Attic dialect in ancient Greece. With this change in the predominance of race, the term *Saxon* came into more frequent use to designate the Teutonic population of this island, and, as there continued to be Saxons on the Continent as well as in England, it has become the practise to call our own ancestors, by way of distinction and not as indicating an amalgamation of race, the ANGLO-SAXONS, that is, the Saxons of England. Yet so permanent are early ethnological principles, that though the Saxon dynasty, the Saxon dialect, and the Saxon laws, became those of the whole Anglo-Saxon people, the older and particular designation has outlived all changes in the names we now possess of Englishmen, the English language, and England.

The Anglo-Saxon language—under which appellation we now include the language of the Teutonic settlers in Britain in its three great divisions—

was one hardly less complicated in its grammatical forms and inflections, when first introduced into this island, than that of ancient Greece. But, at the earliest period at which we know it, the Anglo-Saxon language was already undergoing a degradation from its primitive forms and all the other changes to which languages in general are subject. At the end of the Saxon period much of the language had already become obsolete. In the first place, it was very copious in words, and one word to express a particular idea was continually going out of fashion to give place to another. In the second place, a very important portion of the language in the earlier stage of its history, that of poetry, had become obsolete in the mass. The language of poetry in Anglo-Saxon was originally distinguished, not only by its peculiar phraseology, but by the use of a class of words which were rarely met with in the ordinary language of life, and which evidently belonged to the minstrel class, and to what we may call the heroic age. The writers of poetry at a later period seem to have lost the command of this language, and their verses, though still possessing the metrical forms, had become in other respects, of course with some exceptions, remarkably prosaic. I doubt whether people in general, at the close of the Anglo-Saxon period, understood the older language of poetry, and very few of its words were carried forward into semi-Saxon or preserved in later English.

I am one of those who do not believe in the existence of a Celtic element in the English language.* I have no doubt that the Anglo-Saxons found in this island a people talking Latin, and if any portion of the population really continued to use the Celtic tongue, it must have been a small and unimportant class, who are not likely to have exercised any influence

* It must not be forgotten that the Teutonic and Celtic languages, are, after all, only two branches from the same original stock, and we very naturally expect to find a great number of roots common to both, and similar forms of words presenting themselves with similar meanings, without any reason for supposing that the one language borrowed them from the other. Moreover, I am perfectly satisfied that the Welsh language, as we know it, contains a considerable number of words which have been taken directly, not only from Anglo-Saxon, or English, but from Anglo-Norman also, and the former perhaps, only came into the Welsh language since the Norman Conquest. These two circumstances seem to me quite sufficient to account for the verbal coincidences pointed out in a paper by the Rev. J. Davies, recently published by the Philological Society, as far as those coincidences are real. We are not unacquainted with the history of the Anglo-Saxons in this country, and I believe that that history is quite contrary to the notion that at the time of the Norman Conquest there was any such mixture of the Celtic race with the Teutonic population as could have exercised any influence either on the language or on the character of the people.

on the language of the new conquerors. The evidences of this are numerous, and, to me at least, very satisfactory, but they do not form a part of our subject upon which I can dwell at present. The German race had a term for those who were of a different race from themselves, which was represented in Anglo-Saxon by the noun *wealh*, a foreigner, and by the adjective *wælisc* or *wylisc*, foreign, but which, as the Romans were the only race quite different from their own with which they had much acquaintance, they applied especially and almost solely to people speaking the Latin tongue. During the middle ages, the term Welsh, in the German languages of the Continent, meant especially French, but was applied also to other neo-Latin dialects; in German of the present day the same word *(wälsch)* is applied peculiarly to the language and people of Italy. It was no doubt for the same reason, namely, that they were a people speaking Latin, that the Anglo-Saxons applied this word to the population they found in Britain, and it probably became extended to what we now call Wales and the Welsh, merely because, when they subsequently became acquainted with them, the Anglo-Saxons confounded the inhabitants of that district with the other old inhabitants of South Britain. You must bear in mind, in considering this question, that our knowledge of the Anglo-Saxon language is after all imperfect, for our nomenclature is made up from written documents of a partial description, and there no doubt existed a great number of words in the Anglo-Saxon language which are now entirely lost. No doubt many words now found in the English language, and especially in the provincial dialects, of which the origin is now unknown, had their equivalents in pure Anglo-Saxon.

If I object to the notion of a Celtic element in our language, I object no less to that of a mixture with any other Teutonic dialect. Our older philologists believed in a modification of the Anglo-Saxon during a certain period which they termed Dano-Saxon, supposing that they traced in it the marks of Danish influence; but this theory has been entirely abandoned by the best of our modern scholars, and there certainly are no proofs that such an influence ever existed.* The language which our forefathers spoke in the middle of the eleventh century was the same Low German dialect

* Of course I do not deny that our local dialects, in the parts occupied by them, may have derived some words from the Danes, but the pure Anglo-Saxon language was certainly not influenced by them. It has been the fashion of late years to ascribe much more to the Danes than I believe them to have any claim to. This, however, is a question the discussion of which would take us too far away from the present subject.

which they had brought with them into the island, with the mere changes which any language would undergo in itself during the transmission, under the same circumstances, through several centuries.

At the period just mentioned, a great political event, the Norman conquest, brought into our island a new language, one of those which had grown out of the language of the Roman empire, French, as it was then talked and written in Normandy; and Anglo-Norman, as this neo-Latin dialect is usually termed, continued during two centuries from that time to be exclusively the language of the aristocracy of England. There were thus two entirely distinct languages, bearing no resemblance to each other, co-existent in different classes of the same nation, for we must not suppose that, for a moment, the Anglo-Saxon, or, as we must henceforward call it, the English tongue, was abandoned or fell into disuse. It was long, indeed, an uncontradicted statement of our historians, that William the Conqueror made a deliberate attempt to suppress the use of the Anglo-Saxon tongue in his new kingdom, and Ingulph, or rather probably the pretender who assumed his name, asserts that it was banished from schools, and that the French or Anglo-Norman was used in its place in teaching children the rudiments of Latin grammar. The former of these statements no longer receives any credit, and the latter is disproved by an abundance of positive evidence. We cannot, indeed, doubt that the Anglo-Saxon grammar of the Latin language by Alfric continued to be used in the English schools until late in the twelfth century. Hicks, the Anglo-Saxon scholar, had in his possession a manuscript of Alfric's grammar, with an interlinear gloss of some of the Saxon words in Anglo-Norman, and from the examples he gives we may probably ascribe them to the first half of the twelfth century. This would seem to show that even a foreigner, employed as a teacher in England, had to use the Anglo-Saxon Latin grammar in his school, although his own knowledge of Anglo-Saxon was so imperfect that he was obliged to add a translation of the Anglo-Saxon words into Anglo-Norman for his own use. Further than this, Sir Thomas Phillipps found among the archives of Worcester cathedral some leaves of a copy of Alfric's grammar, written in the degraded form of the Anglo-Saxon language which prevailed in the middle and latter half of the twelfth century. The Anglo-Saxon language had at this time undergone considerable degradation from the form it presented in the eleventh century. It was rapidly losing its grammatical inflections, and in its words broad sounds were exchanged

for softer and quicker ones. Thus the final *a* was constantly exchanged for *e*, and the prefix *ge* was everywhere turned into *y* or *i*. For *cempa*, a champion, they said *kempe;* for *gemetung*, a meeting, they said *imeting;* and for *gerefa*, a prefect, they would say *ireve*. With this change, however, there was no considerable introduction of Norman words. It was pure Anglo-Saxon as to the substance, but degraded in its forms. Philologists have given to the language in this state of transition the name of semi-Saxon. We can trace its progress in several literary monuments of importance. The latter years of the Anglo-Saxon Chronicle, which was continued to 1145, exhibit the language as already breaking very fast; in the metrical chronicle of Layamon, and in the metrical harmony of the gospels called the Ormulum, which were both probably written in the closing years of the twelfth century, the Anglo-Saxon grammatical forms have undergone an entire change, which is still more complete in the semi-Saxon text of the *Regulæ Inclusarum*, or rule of nuns, in the earlier half of the thirteenth century. It is evident from the character of these, and other literary remains of less importance, that the use of the English language, during the twelfth and first half of the thirteenth centuries, was by no means confined to the lower classes of society, but it prevailed generally among the middle and educated classes, and among the clergy and in the monastic houses, at least in those devoted to females.

It was in the middle of the thirteenth century, when the national spirit of the English people showed itself in the great popular struggle under Simon de Montfort, that the English language, which has now emerged from that transition state under which it has been known as semi-Saxon, at length asserted what we may call its political rights, and reappeared in the court. The political songs, and other writings, composed during the civil strife known as the barons' wars, show us not only two, but three languages, co-existing in this country at the same time. These were, the English, the Anglo-Norman, (or, as it was usually called at the time, the French), and the Latin, of which we need not take the latter into consideration, as it belonged almost exclusively to the clergy.

The long continued existence of what we call the Anglo-Norman language in this country was not a mere accident, but it was a consequence of the political condition of Europe. The feudal aristocracy was united throughout the whole extent of feudalism, by a community of interests as well as feelings, to such a degree, that the nobles of one country felt a closer re-

lationship with those of another than with the unaristocratic classes of their own countries or even with their own sovereign. This was so much the case that, until the spirit of feudal society began to decline, it was no uncommon thing for a baron to hold fiefs in the dominions of several different sovereigns, and to form his alliances sometimes with the barons of one of these countries and sometimes with those of another. A common language was, therefore, a necessary element in the system; and as feudalism had originated in France, and took its greatest development there, French became its universal language. It was, then, not only as the language of the Normans, but as that peculiarly of the feudal aristocracy in general, that French was introduced into England under William the Conqueror, and it was in that character that it continued to be the language of the aristocracy of England until feudalism itself was broken down. It had ceased, however, to be their exclusive language in the thirteenth century. In the latter years of that century, a tract or treatise was written in French or Anglo-Norman verse, forming a sort of vocabulary of that language, and designed expressly for the purpose of teaching it to children. The number of copies of this tract still preserved in MS. show that it was a popular elementary book, and that it was in extensive use. The compiler was Walter de Biblesworth, a man known elsewhere as a writer of French verse and apparently belonging himself to the aristocratic class; he was a friend of the great statesman of the reign of Edward I, Henry de Lacy earl of Lincoln and Salisbury, and compiled the treatise we are speaking of at the request of the lady Dionysia de Monchensey. Thus all the relations of the author and of his book were of an aristocratic character. Now Walter de Bibblesworth states his object to be to instruct the rising generation in the proper use of the words of the French language, and especially in the correct application of the genders, and the French words are explained in English, implying thus that the learner was acquainted with the English language before he began to learn French. We thus ascertain the very important fact that, before the end of the thirteenth century, the children of the aristocracy of England learned English before they were instructed in any other language, or, in other words, that English had become their mother tongue.*

* This very curious monument of the educational system of the middle ages will be printed in a volume of medieval vocabularies, Anglo-Saxon, Anglo-Norman, and English, now preparing for publication at the expense of Mr. Joseph Mayer, of Liverpool, to

Although, therefore, French was no doubt still looked upon as the peculiar language of the aristocracy, a new modification had taken place in the mutual position of the two languages, for, instead of their mere co-existence in the same country, but in two different classes or great divisions of society, we have them now coexistent in the same class. This change marked what may be considered as the birth of modern English literature. The English language now began among the aristocracy and at court to be adopted as that of our national poetry and prose, and to step into the place which had been usurped almost exclusively by the French or Anglo-Norman language during the twelfth and thirteenth centuries. With it, also, began the intermingling of the two languages, in consequence of which a large portion of the Anglo-Saxon language gradually became obsolete.

It is necessary, however, that this process of intermingling and becoming obsolete should itself be explained, for we should form a very erroneous opinion if we supposed, as some who have treated on the subject seem to suppose, that there was any design or plan in the mixture. You will easily conceive how people talking equally among themselves two different languages would be continually tempted to use, in one language, a word or words taken from the other, either because it was a favourite word with them, or, more usually, because it presented a more familiar picture of the object it was used to designate. Much more would this interchange of words take place, in the intercommunication between the class which used both languages and that which used nothing but English in regard of a number of words from the French language which custom had begun to affix to certain objects. Thus, we know well that the Anglo-Saxon table was formed merely by placing a board upon trestles at the time of eating, and that it was designated simply by the name of *a board*. Permanent tables were probably known to the Saxon portion of our population only through the Normans, and as the former constantly heard them spoken of by this French name of *table*, they would naturally learn the word themselves, and, if they did not use it at first indiscriminately for the old description of table as well as the new one, it would become so completely identified with the latter, that we are not surprised at the older English

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whom not only the Historic Society, but the science of Archæology in general, is under so many obligations. These vocabularies are extremely valuable, as illustrating not only the history of our language, but the manners and condition of our forefathers.

word being lost as the old practice was discontinued. In fact the Saxon word for a table can hardly be said to belong to the English language at the present day, yet, though we should be surprised at hearing anybody call a table a board, we still use the word in certain phrases derived from ancient customs, and we speak of a "festive board," and talk of giving people "board and lodging," and of sitting at a council or committee board. Again, we know that an Anglo-Norman would call a sheep a *mutton*, while an Englishman of the Saxon race would call it a *sheep*. Now we know that in feudal times nearly the whole of the animal provisions of the estate was swept off into the castle or mansion of the landlord, where it was consumed in extravagant hospitality or salted down to keep in store for occasions when fresh meat could not be procured. There can be little doubt from what we know of the condition of the people in the feudal ages, that the agricultural population, who among themselves knew the various animals alive by their Anglo-Saxon names, rarely tasted their flesh except when they sat in the halls or kitchens of their landlords, where they would hear it spoken of, and must ask for it, only by its Anglo-Norman name. Hence they would gradually become accustomed to call the animal a *sheep*, and the flesh of it, when dead, *mutton*. Thus we see how our language has become enriched by adopting in some cases the originally synonymous words of the two languages, and giving them a somewhat different meaning. All the usual articles of animal food have fallen under the circumstances of the example just given. We speak of beef, mutton, veal, pork, by their Anglo-Norman names, while we continue to call the living animals by their Anglo-Saxon names of oxen, sheep, calves, and swine. Words connected with cooking have been similarly exchanged. Thus, the Anglo-Saxon word *brædan* or *bredan*, to roast, has disappeared from our language, and the word we have adopted in its place is derived from the Anglo-Norman *rostir*, the modern French *rôtir*. Roasting was in the middle ages practised chiefly with regard to fowls and smaller animals, while substantial meat was much more commonly boiled, perhaps partly from the circumstance that so great a portion of it was salted. Hence the Anglo-Saxon word *seothan*, to boil, held its position in the language much longer than *brædan*; and its representative, to *seethe*, can hardly yet be said to have become obsolete. Nevertheless, it has virtually been long displaced by the Anglo-Norman word, to *boil*. Similarly the Anglo-Saxon word, *hyrstan*, to fry, has been expelled by the

Anglo-Norman equivalent. The adoption of Anglo-Norman words in cookery may be explained by the same causes which influenced the change of the names of meats. The artizan and the manufacturer, on the other hand, have generally preserved the Anglo-Saxon names connected with their occupations, although we find these exchanged sometimes for Anglo-Norman, under circumstances of which it would not be easy to give an explanation. Thus we learn from the vocabularies that the Anglo-Saxon name for a carpenter's plane was *locer*, which appears to have become obsolete early in the Anglo-Norman period, for we have long known no other than the Anglo-Norman name. Indeed, it would be most dangerous to attempt to form any general rule upon such examples as these, for, whatever rule it might be, when we attempt to apply it we should find nothing but exceptions. Thus, from the strictness with which game was preserved by the feudal barons, we might suppose that the different animals which came under that designation would have received Anglo-Norman names, yet the names the animals of the chase still bear in our language, such as a deer, a hart, a roe, a hare, are all Anglo-Saxon, while, singularly enough, among the birds which come under the head of game the partridge has lost its Anglo-Saxon names of *ærsc-henn* or *rephung*, the pheasant perhaps that of *wor-hana*,* and the heron that of *hragra*, in order to take their present names which are purely Anglo-Norman. As war was so peculiarly the business of the feudal aristocracy, we might suppose that at all events the names for arms would be Anglo-Norman, yet we find that this is not the case, for we speak of a *sword* and not of an *épée*, of *bows* and *arrows* instead of *arcs* and *fletches*, and we even usually call the *lance*, the distinctive arm of the knight, by its Anglo-Saxon name of a *spear*. What is still more remarkable, our language has preserved the Anglo-Saxon word *knight* to distinguish the feudal warrior himself, instead of his Anglo-Norman name of *chevalier*. In the derivative from this word, however, although the two court poets of their age, Chaucer and Gower, used the English word *knighthode* for chivalry, the

* It has been said, I know not on what authority, that the pheasant is a comparatively modern importation into our island. I can only say that it was certainly commonly known here in the twelfth century, and I am not aware of any reason for supposing that it was then a novelty. In the treatises on cookery and the service of the table, compiled in the fourteenth century, we have directions for dressing and serving it, as well as for catching it in the books on Venerie. The early Anglo-Saxon vocabularies interpret the Latin *phasianus* by *wor-hana*, which has been conjectured to mean a weed-hen.

French word has subsequently superseded it. When we go to other classes of subjects, the caprice shown in the adoption of words from either language is still more incomprehensible. Thus, it would be difficult to say why, among flowers, we have adopted the Anglo-Norman names of lilies, violets, dandelion, germander, plantain, &c., and have retained the Anglo-Saxon ones of daises, cowslips, thistles, honeysuckles, and a numerous list of others; or why, in some cases, we have preserved the Anglo-Saxon names of fish, such as whales, seals, lobsters, crabs, eels, &c., when others have been abandoned to adopt in their places such names as salmon, tenches, sturgeons, gudgeons, perches, lampreys, and some others, which are Anglo-Norman. We can indeed discover no general law or rule which influenced in any degree the adoption of particular words from one language or the other. The two languages continued long to exist independently, and people who wrote in English might adopt at their own caprice a word from one or the other.

In one respect, however, these two languages in England stood on a very different footing, for, while the Anglo-Norman words which were finally rejected from our written language, ceased to exist among us with the language itself, a vast number of the Anglo-Saxon words which disappeared from the English language as it was written and spoken in cultivated society, were preserved among the populace and the peasantry, and contributed to form the trivial language of the common people, or, much more extensively, of our provincial dialects. Words are easily rejected from the language of cultivated society, but the tenacity with which the peasantry especially, and the lower classes of the population generally, retain the old words and phraseology of their mother tongue, through many ages, is truly extraordinary. One or two examples have occurred to me which I think deserve to be remembered. The Anglo-Saxon vocabulary of archbishop Alfric, compiled in the tenth century, gives the Latin and Anglo-Saxon equivalents, "*constructio, vel instructio*, hyrdung." The modern Anglo-Saxon lexicographers, puzzled by the Latin words, appear to have been able to make nothing of the Anglo-Saxon word *hyrdung*, and have given it in their dictionaries without explanation. The natural derivation of it would be from the verb *hyrdan*, to guard, or keep. Now, you can hardly pass for any length of time through the streets of our larger towns without seeing, in one place or another, a house in the process of repairing or rebuilding, and you will generally see that it is surrounded with a tolerably

lofty and strong frame-work of boards, for the protection of the work and the workmen. If you ask the latter what they call this wooden frame-work, they will tell you at once a *hoarding*. I have little doubt that this is the identical *hyrdung* of the Anglo-Saxon vocabulary, especially as it is there placed among one or two other words connected with building; and you will thus see that our common builders have actually preserved during the vicissitudes of eight centuries a word which seemed so entirely lost to the world that by them alone we are able to give it an explanation in an Anglo-Saxon dictionary. An English-Latin dictionary of the fifteenth century, known by the title of the *Promptorium Parvulorum*, furnishes us with another example. You will there find, under the letter L, the words, "Locchester, wyrm," meaning that *locchester* was the name of a kind of worm, and the Latin equivalent *multipes* is added. Now as the word *worm* had in Anglo-Saxon and Old-English a very extensive meaning, and as the Latin *multipes*, meaning simply an animal with many feet, was not much more definite; the modern editor of the *Promptorium Parvulorum*, Mr. Way, was unable to fix the exact meaning of the English word—and there seemed no means left of ascertaining it, until, two or three years ago, my friend, Mr. Halliwell, walking in a garden in Oxfordshire, accidentally overheard the gardener talking about *lockchesters*, and immediately asking him what these were, received for answer that they were *woodlice*. On a further inquiry he ascertained that *lockchest*, or *lockchester*, was not an uncommon word in some parts of Oxfordshire for a woodlouse, although it was rapidly going out of use. As the *Promptorium Parvulorum* was compiled in Norfolk, this must, in the fifteenth century, have been an ordinary word for a *woodlouse*, and not confined to a particular locality. Again, reading one of the comedies of the age of Charles II., "The Cheats," published in 1662, the scene of which is laid in London, I meet with the following language, put into the mouth of one of the characters: "O my child, my child, thy father is prettie *hoddie* again, but this will break his heart quite." The old dictionaries give the word *hoddy* as meaning hearty, or strong, but I have looked in vain for it in any dictionary of the present day, until I happened to open a glossary of the East Anglian dialect, where I find that the word still exists in the sense of "well; in good spirits." It appears clear, from this and other examples which I could quote from the writings of the same period, that a multitude of words were in general use in the common language of England so late as the latter half of the

seventeenth century, which now exist only in some local dialect. This shows us the great importance, in a philological point of view, if in no other, of collecting and publishing the words of our provincial dialects.

Those dialects show us in many ways the curious manner in which the Anglo-Saxon language was broken up for the formation of modern English. It must not be supposed that Anglo-Saxon words became obsolete merely because they were displaced from the English language by Anglo-Norman words, for words of Anglo-Saxon origin were continually displacing one another. In the first place, the Anglo-Saxon language, as I have remarked before, was copious in words, and it often happens that out of a number of names for the same thing, or verbs expressing the same or a similar action, one or two only have survived. In the second place, it seems evident that among the Anglo-Saxons themselves there were numerous words, then only used in popular conversation or in particular districts, which, in the course of time, gained the superiority over their prouder synonyms, and finally superseded them. Hence, while a great number of what are known to have been good Anglo-Saxon words have been expelled from the English language, their places have been taken by others, also no doubt Anglo-Saxon, which are so strange to us that all we can absolutely say of them is, that they are not Anglo-Norman. This, also, will perhaps be best illustrated by a few examples. I will take the first from the language of agriculture. The only word we find used in the Anglo-Saxon writers for a plough is *sulh*, yet we are certain that some such word as *ploh* or *plog*, with this meaning, did exist in that language, not only because we know that plough is not an Anglo-Norman word, but because we find the word *ploh* used once in the Anglo-Saxon laws to signify what was afterwards called a *ploughland*, because an Anglo-Saxon ecclesiastical document speaks of a tax levied by the church on the agriculturists under the title of *plou-ælmesse*, for which another document gives the synonym *sulh-ælmesse*, and because, further, we find the representative of the word in the modern German is *pflug*. What, therefore, must have been in the Anglo-Saxon period only a popular, or an almost obsolete name for a plough, has actually in the modern English language superseded the regular Anglo-Saxon name of a plough, *sulh*, which now only exists in the dialects of the West of England, where a plow is still called by the peasantry a *sull*, *sullow*, or *sowl*.* The Anglo-Saxons had several verbs to signify the operation of

* It is curious that the word *sullow* for a plough, with *bannut* for a walnut, and one

ploughing, such as *erian*, *fyrian*, and *tilian*. Of these, the first, in the form to *ere* or to *ear*, remained in general use in the English language until the sixteenth century, and is perhaps still in use in some of the local dialects. *Fyrian* is only retained in the sense of to furrow, or make furrows; and *tilian* remains in the more general sense of to *till* the ground. We now, in English, call the operation only *ploughing*, from the name of the machine used in performing it. Again, the only Anglo-Saxon word we know for a window is *eage-thyrl*, meaning literally an eye-hole, from which we derive a more vivid picture of the sort of openings by which the interior of an Anglo-Saxon house was lighted than a long description would convey to us. Larger openings for light came into use probably in Norman times, and they, as well as all windows, were called by the Anglo-Normans *fenestres*, in modern French *fenêtres*. It is a curious circumstance that the Teutonic dialects on the Continent have generally adopted the French word, which of course represents the Latin *fenestra*; in modern German a window is called a *fenster*. Yet the English language has thrown off what would have been its Anglo-Norman word *fenester*, and has retained in its place not the Anglo-Saxon word we know, but another, which does not occur among the words of the Anglo-Saxon language that have been preserved, though I think that the English word *window* is found as early as the thirteenth century, and it is doubtless a purely Anglo-Saxon word, and bears the same relation to *wind* which the Spanish word *ventâna* for a window bears to *viento*. Again, among the Anglo-Saxon names for a sword are *sweord*, *seax*, *bill*, *brand*, *mece*, and *ord*. Of these, the last signified literally the edge of a weapon, and it and the three preceding words belong properly to the language of poetry, and therefore soon became obsolete. The word *seax* has also been lost, and *sword* has superseded all the others. The principal Anglo-Saxon words for an arrow were *arewa*, *fla*, *sceaft*, and *stræl*. The first is the only one of the four which remains in its original sense, although *fla* or *flo* was retained till the fifteenth century, and in Sussex they still call an arrow a *streal*. The common

or two other words, now peculiar to the dialects in the west of England, and not found, as far as I know, in any of the old English writers, occurs in a Latin and English vocabulary of the earlier part of the fifteenth century, printed in the same volume of vocabularies mentioned in a former note as preparing for publication under the auspices of Mr. Mayer, and evidently compiled in that part of the island. This would seem to show that even the verbal peculiarities of the principal English dialects are much older than we might otherwise be led to suppose, and perhaps even this has some connection with the history of the word *sulh* and *plough*, as given in the text.

Anglo-Saxon names for a river, taking them in alphabetical order, were, *becc*, *broc*, *burne*, *ea*, *flod*, *rith*, or *ryth*, and *stream*. The precedence of all these has been taken by the Anglo-Norman word *rivere*. The word *ea*, which appears to have been the most general Anglo-Saxon word for a river, has only remained in the innumerable names of localities, into the composition of which it enters. *Rith* is also lost. *Broc* remains in the modern *brook*, while *burn* is preserved in a similar sense in the dialects of the North of England, and *becc* continues to exist in the *beck* of some of the northern provincial dialects, and in the *bache* of the dialects of the Welsh border. Of the ordinary Anglo-Saxon names for a hall, *heal*, *caffertun*, *inburh*, *sal*, and *sele*, the first is the only one preserved in the English language, although the two last might have been supposed to have had the greater chance of lasting, as being identical with the Anglo-Norman word *sale*. Another curious instance of the capricious character of these word-revolutions and vicissitudes in our language is furnished by the names of the rabbit. It is somewhat remarkable that the Anglo-Saxon dictionaries give us no word for a rabbit, but from the thirteenth to the beginning of the last century the common English name for this animal was a *conig* or *cony*. There is some room for doubt whether this word be Anglo-Norman, in which language a rabbit was called a *connil* or *connin*, or whether it be of Anglo-Saxon origin, for the same animal is still called in German *kaninchen*. Both, no doubt, represent the Latin *cuniculus*. But this word *cony*, for some cause or other, was in the last century entirely superseded by that of *rabbit*, which must no doubt have been an Anglo-Saxon word, because it is found in another Low German dialect, the Dutch, under the forms *robbe* and *robbekin*. It is found in the *Promptorium Parvulorum* of the fifteenth century with the signification of a young rabbit —"Rabet, yonge conye, *cunicellus*." I do not remember having met with the word in the English language at an earlier period. I may quote another example of the movements and vicissitudes of words in our language from the nomenclature of birds. The Anglo-Saxon vocabularies give to the Latin word *turdus*, the two interpretations *scric* and *stær*, and they explain the Latin *merula* by *thrisc* or *throsle*. Yet the Latin *turdus* is usually understood as meaning a thrush, and *merula* as signifying a blackbird. Under the Anglo-Normans the word *mauvis*, anglicised into *mavis*, was introduced to signify a thrush, and almost superseded the latter word in the English language, although *throstel*, or more usually

throstel-cock, continued to be used. At the same time, the Anglo-Norman word *merle*, from the Latin *merula*, came in to signify a blackbird. This shows that the original meaning of the Latin *merula* was well known, and would lead us almost to suppose that the Anglo-Saxons may have meant a blackbird by *thrisc* and *throstle*. The English glossaries of the fifteenth century still interpret *merula* by *thrystel-cock*, and *mauvis* continued to be the English word for a thrush, and it long held its place in the language of literature. Nevertheless, the Anglo-Saxon words *thrush* and *throstle* have finally regained their position as the sole acknowledged names, in the English language, of the song-thrush, and have expelled their Anglo-Norman equivalent *mavis*, and in this case it is the Anglo-Norman word that remains in our dialects. In the north of Essex, and I believe in other parts of East Anglia, a singing thrush is still called a *mawis*. One of the Anglo-Saxon equivalents of the Latin *turdus* is preserved in the *schreech*-thrush, a provincial name for the missel-thrush; and the other, *stare*, is now used in the signification of a starling. Again, the names cowslip, or cowslop, (*cusloppa*,) and oxslip (*oxan-slippa*), are purely Anglo-Saxon, and have preserved their place in the language—though not quite undisputed, for another word *paigle*, the derivation of which seems very uncertain, though its form appears to bespeak an Anglo-Norman origin, had intruded itself into the English language before the sixteenth century. There is some reason for believing that the *paigle* was originally the oxslip. It was a word in common use among the English writers of the Elizabethan period; yet it has now dropped into a provincial word, and, singularly enough, in Essex it seems to have changed places with cowslip. In the neighbourhood of Saffron-Walden the name *paigle* is given to the common cowslip (the *primula veris*), while the oxslip (the *primula elatior*), which is very abundant there, is called a *cowslip*. The language of natural history was especially rich and copious among our forefathers, whether Anglo-Saxon or English, which seems to show the existence among all classes, and at all periods, of a great love for nature, and a tendency to observe natural objects. In the comparatively small proportion which remains of the popular language of the Anglo-Saxons, we find numerous synonyms for plants, animals, birds, &c., many of which have been since lost, though some are preserved in a remarkable manner, and where we should least expect it. It is from this class of words especially that our provincial dialects are enriched.

Thus, our Anglo-Saxon forefathers called a grasshopper a *gærs-hoppa* (grass-hopper), or a *gærs-stapa* (grass-stepper), or a *hama*, or a *hil-hama*, or a *secge-scere* (sedge-shearer), the first of which names only is preserved in the English language, and I am not aware that any of the others exist even in our local dialects. I find a woodlouse called, in vocabularies of the fifteenth century, a *locchester*, a *lokdore*, and a *welbode*; and in those of the sixteenth a *cheselip*, or *cheslop*, a *kitchin-bole*, and a *woodlouse*. Of these, the last only will be found in a dictionary of modern English, but I have already remarked that the name of *lockchester* is preserved among the peasantry of Oxfordshire, and I may add, that the peasantry in the North of England still call a woodlouse a *kitchen-ball*, and that those of the Southern dialects call it a *chissel-bol*, which is perhaps the representative of *cheslop*. The other two names appear to have become quite obsolete. In the *Nomenclator*, a copious Latin and English vocabulary, published in the year 1585, we have three synonyms for the glowworm, namely, *glowbird*, *glowworm*, and *lightworm*. I think that I have heard a glowworm called a *glowbird* in some one of our local dialects. The same vocabulary gives to a well-known plant, the *leontodon taraxacum*, the several names following: *dandelion*, *priest's crown*, *swine's snout*, *monk's head*, *dog's teeth*, and *common cicorie*. The first of these names, which is derived from the French, is the only one of them now acknowledged in the English language; I am not aware that any of the others are in use. The same vocabulary gives as synonyms, *libbard's bane* (i.e. leopard's bane), *wolf's bane*, and *monk's hood*. All these three names of plants are still preserved, but the first is applied to the *doronicum pardalianches*, and the two others to the *aconitum napellus*. Two names of the latter are recorded in the vocabularies of the Anglo-Saxon period, *on-red* and *thung*, neither of which is preserved in the language. These few examples, which might be multiplied almost infinitively, will, I think, sufficiently explain how words have disappeared, and reappeared, in our language, and in its provincial dialects, and at the same time show that the further investigation of this part of the subject would not be without interest.

But it is here a digression, which I must follow no longer. As I have already stated, the two languages representing Anglo-Saxon and Anglo-Norman, but which at this period we may better describe as French and English, continued to exist in England independently during the whole of the fourteenth century, although there was a constant interchange

of words going on between them. I do not mean to say that this interchange was then a permanent one, although a certain number of Anglo-Norman words had already been firmly engrafted on the English tongue. We have no means of knowing what was the exact character of the language of popular conversation at this period, which we may, however, suppose to have been still very decidedly Saxon; but we know that an English writer used just as many French words as he pleased, or as suited the class of readers to whom he addressed himself. Thus, one of the most remarkable poems in our language, the Visions of Piers Ploughman, which was put forth as the grand proclamation of a demand for popular reform and of the doctrines of popular freedom, is written not only in a language which contains a very small number of Anglo-Norman words, but it is composed in the same form of alliterative verse, without rhymes, which was peculiarly characteristic of pure Anglo-Saxon poetry. This sudden reappearance of the ancient Anglo-Saxon form of versification in the middle of the fourteenth century is itself a remarkable phenomenon, and it is an equally curious circumstance that this description of versification, which became thenceforward for some time popular among the people, is generally filled with a great number of purely Anglo-Saxon words, of a sort which we had long missed in English literature, and which we had every reason for believing had long become obsolete. Yet it is not likely that men who wrote for popularity would use obsolete words, which they would hardly be likely to understand themselves, and which certainly would not be understood by their hearers or readers. We must, therefore, conclude that even down to the end of the fourteenth century, "among the people," the mass of the words of the Anglo-Saxon language, much of its phraseology and construction, and even its forms of versification, continued to exist.

On the other hand, when people wrote for the aristocracy, or for the court, they adopted the French forms of verse, and filled their language with what we should now consider an extravagant proportion of French words. Such is the case in a great degree with Chaucer, who has been very erroneously termed "a well of English undefiled;" and the reason why the writings of Chaucer are more easily understood by people in general than Piers Ploughman, or many of the other literary monuments of the time, must be sought in the circumstance that a great proportion of the obsolete words in Chaucer are French, while nearly all those in the other

writers alluded to are Anglo-Saxon, and as most modern readers have some knowledge of the French language, but very few know Anglo-Saxon, they are naturally less embarrased by the verses of the old court poet than by those of the man of the people.

It will thus be understood that at the end of the fourteenth century the English language was in a very unsettled condition, and that in the hands of writers of different class or rank it assumed every variety of character, from that which presented the pure Anglo-Saxon element almost unmixed to that which was more than half French. Immediately after this period the use of the French language in our island was entirely superseded by the English. It was the fifteenth century, low as it stood in literary character, which performed the great work of purging and purifying. By a process which we cannot distinctly trace, and which we certainly cannot clearly explain, though it appears to have been in a great measure spontaneous, the English language, during the fifteenth century, rejected a very considerable proportion of the French words with which it was encumbered, and at the same time dropped an equally large quantity of superfluous Anglo-Saxon, which now became entirely obsolete, or fell, as I have just shown, into our local dialects. The English language was also undergoing another change during this period, which we must probably ascribe, in a great measure, to the revolution which was taking place in the social condition, and to the more active movement in commerce and politics. I have told you how, in the course of the twelfth century, the Anglo-Saxon language underwent an organic change in its verbal forms and inflections. Although the latter, however, were greatly simplified, and although the degradation continued during the thirteenth century, they were not entirely lost; and the English language during the fourteenth century possessed a perfect grammatical construction, with regular inflections, indicating cases and numbers both of nouns and adjectives, and of numbers and persons of verbs, which are never transgressed in the manuscripts except by the mere carelessness of the scribes. These inflections, represented chiefly by the final *e* and *en*, will be found strictly observed in the language of Piers Ploughman in the middle of the fourteenth century, and they are no less carefully observed in that of Chaucer at the end of that period. It is, in fact, through ignorance of the nature of those inflections, and of the grammatical system of the English language in the fourteenth century, that the editors of our ancient poet, from the sixteenth century to the

nineteenth, have done nothing but make confusion of his language and ruin the harmony of his verse. But immediately after Chaucer wrote, very early in the fifteenth century, the grammatical forms of the language began to be neglected, and people, pronouncing the words apparently more quickly, first ceased sounding the final *e* of the inflections, and then let it drop altogether. The fifteenth century, in fact, was equally a period of transition from the condition of our language in the fourteenth century to modern English, as the twelfth century had been a period of transition from Anglo-Saxon to the English of the middle period. The invention of printing no doubt contributed towards the final purification of the English language, and to the settlement of its forms. In the first half of the sixteenth century, the English language, purged of the superfluous French and half-obsolete Anglo-Saxon which had previously encumbered it, and with very few grammatical inflections of any kind, assumed a form which prepared it for the glories of the Elizabethan period, and the language of Shakespeare is so well known to you all, that I feel sure that it is unnecessary for me to follow its history any further.

I will, however, briefly point out a new danger to which the English language was exposed in the sixteenth century. The revival of learning was followed in England by an increased activity in scholastic education, and by an extraordinary reverence for the classical languages of antiquity. This soon assumed the character of a fashionable and exaggerated pedantry, and people began, both in conversation and writing, to interlard their English with Latin words, to which they merely gave an English form. In fact, as most writers and readers of books were now almost as well acquainted with the Latin language as with their own, the former began to assume towards it very much the same position which Anglo-Norman held towards Anglo-Saxon at an earlier period, and as each writer introduced into his English just as many Latin words as he pleased, it might have been a question at one time whether the language we were destined finally to speak would not have been a sort of mongrel between Latin and English. This affectation of Latin reached its greatest height in an age worthy of it, the reign of James I., after which it began rapidly to disappear, and, fortunately, but a very small number of the Latin words which had thus been intruded into our language have been retained. But in one respect this dragging of the English language into an unnatural relationship with the Latin language exercised a disastrous influence on

its future. When men began to study the English language, and to seek and treat of its grammatical rules, they lay under a prejudice which had grown up with the Latinists, and which, unfortunately, had not died with them, and, forgetting that English was a language in itself, they took it for granted that its grammar was merely an English edition of Latin grammar, and where they found that the English forms as they existed did not agree with the rules of Latin grammar, they attempted to force them into concordance. This mistake has spoilt all the English grammars which have been published previous to our own days, and, unfortunately, we are not yet emancipated from it; nor shall we be emancipated until the language of Alfred the Great, and that of Piers Ploughman and Chaucer, are more generally taught in our higher schools and colleges. This is certain, that our grammarians and lexicographers have, during the last two centuries, been laboring in their ignorance to reject from the English language some of its purest and best phraseology.

ON THE LEPIDOPTEROUS INSECTS OF THE DISTRICT AROUND LIVERPOOL.

By Charles Stuart Gregson.

(Read 19th March, 1857.)

(Continued.)

PART V. containing the Geometridæ.

PART VI. containing the Tortricidæ.

For the preceding portions of this paper the reader is referred to vol. vii. page 237, which contains the true Noctuidæ; and vol. viii. page 153, which contains the diurnal Lepidoptera, the Sphingidæ, the Bombycidæ, and the Pyralidæ. Part vii. which will contain Crambidæ and Tineidæ is reserved for the next volume.

PART V. Section 9.

Heterocera.

Family 1. Geometræ.

Genus 1. Geometra, Linn.

G. papilionaria, Linn.—The larvæ not uncommon in April, on young Birches. Bidston Hill, Woolton, &c.

Genus Hemethea, Dup.

H. cythisaria, W. V.—Plentiful in Jackson's Wood, and at Bidston Hill. Flies at dusk. July.

Genus Chlorissa.

C. putataria, Linn.—Abundant in lanes.

C. æstivaria, Esp.—In lanes at dusk. June and July.

Genus Metrocampa, Lat.

M. margaritata, Lin.—Bidston plantation, Birchwood, and Hale. July. Dusk.

Genus Ellopia, Steph.

G. fasciaria, Lin.—Larvæ on Scotch firs April and May. Prenton wood, Bidston; at sugar in July.

Genus Ourapteryx, Leach.

O. sambucaria, Lin.—Pigue Lane, Woolton. July.

Genus Rumia, Dup.

R. cratægata, Lin.—Everywhere in thorn hedges.

Genus PERICALLIA, Steph.

P. syringaria, Lin.—Hale, Warbrick Moor. Dusk. July.

Genus EURYMENE, Dup.

E. dolobraria, Lin.—Plantations, Rock Ferry, Dacre Park. Dusk.

Genus EPIONE, Dup.

E. apiciaria, W. V.—Not uncommon on the coast. August. Sugar, and flies at dusk.

E. parallelaria, W. V.—Plantation near Wallasey Mill.

Genus ENNOMOS, Dup.

E. illunaria, Hub.—Bidston, Hale, Warbrick Moor, Upton, and Speke. April and July.

E. lunaria, W. V.—Warbrick Moor, Hale, and Woolton. April and July.

E. erosaria, W. V.—Bidston, Upton, and Hale. September at light.

E. fuscantaria, Haw.—Bidston and Walton. September.

E. tiliaria, Hb.—Old Swan, Clifton Park, at light plentiful. September.

Genus ODONTOPERA, Steph.

O. bidentata, Lin.—Plentiful about pine wood.

Genus CROCALLIS, Tr.

C elinguaria, Lin.—Thorn hedges, not scarce. July.

Genus HIMERA, Dup.

H. pennaria, Linn.—Bred by Mr. Edmondson, fed upon hollyhock. Plentiful at gas lamps. West Derby, Aigburth. October.

Genus MÆSIA, St.

M. favillacearia, Hub.—Simonswood moss, Stourton. June.

Genus MACARIA, Curt.

M. liturata, Lin.—Hale, Lydiate, and Dacre Park.

Genus HALIA, Dup.

H. wavaria, Lin.—Plentiful in gardens.

Genus NUMERIA, Dup.

N. pulveraria, Lin.—Not scarce at Prenton, Oxton and Stourton. May.

Genus FIDONIA, Stephens.

F. atomaria, Lin.—Abundant on the mosses; spring and summer.

F. plumaria, W. V.—Local upon Rainford moss, and upon a small moss near Eccleston. August.

F. piniaria, Lin.—In profusion in Kirby wood, and may be taken in the pine woods in Worral, July.

Genus EUPISTERIA, Boisd.

E. heparata, W. V.—Bidston Plantations, summer.

Genus ANISOPTERYX, Steph.

A. æscularia, W. V.—May be bred from curled sallow leaves. All around the district; is difficult to find in early spring, on tree boles and palings.

Genus HIBERNIA, Lat.

H. leucophæaria, W. V.—In oak woods, Eastham, February and March.

H. rupicapraria, W. V.—Plentiful in old lanes, sitting upon thorn hedges, from 9 to 11 p.m.

H. progemmaria, Hub.—Abundant on thorn hedges in early spring, search with a lanthorn.

H. aurantiaria, Esp. — On hedges around Aigburth and West Derby, occasionally at lamps.

H. defoliaria, Lin.—Plentiful at gas lamps in the autumn.

Genus PHIGALIA, Dup.

P. pilosaria, W. V.—Plentiful under stone copings in March and April, and at gas lamps.

Genus NYSSIA, Dup.

N. zonaria, W. V.—Plentiful on the sandhills at Crosby and Wallasey. March and April.

Genus BISTON, Leach.

B. prodromaria, Lin. — I have frequently taken this species at Bidston lighthouse, flies at the lanthorn. March and April.

B. betularia, Lin.—Plentiful at Bidston and West Derby.

Genus BOARMIA, Tr.

B. repandata, Lin.—Abundant, especially about Prenton. July.

B. rhomboidaria.—Abundant where ivy grows. June and July.

Genus HEMEROPHILA, Steph.

H. abruptaria, Thunb.—May be found in fir woods, but especially in out-houses near fir woods. Summer.

Genus CLEORA, Curt.

C. lichenaria, W. V.—Wherever the trees are covered with Lichen, as at Prenton, Frankby, Hooton, and Spittal. June.

Genus TEPHROSIA, Boisd.

T. consonaria, Hub.—Single specimen from the neighbourhood of Upton.

T. crepuscularia, W. V.—On tree boles, Hale and Hooton. April.

T. punctularia, Hub.—Plentiful at Croxteth and Knowsley. April.

Genus GNOPHOS, Boisd.

G. quadripustulata, Don.—Plentiful on the rough ground between Poulton and Wallasey. July. Beat gorse bushes.

G. obscuraria, W. V.—Plentiful in the lane between Tranmere Hall and Prenton wood. July.

Genus PHASIANE, Dup.

P. palumbaria, W. V.—In profusion where gorse grows. July.

Genus LOZAGRAMMA, St.

L. petraria, Esp.—Very abundant in Eastham and other woods. May.

L. insolaria, W.V.—Common on the sand hills throughout the summer.

Genus ANAITIS.

A. imbutaria, Hub.—Plentiful upon Simonswood and Bickerstaffe mosses.

A. plagiata, Lin.—Childwall lane. July.

Genus EUBOLIA, Bdv.

E. cervinata, W.V.—Bidston.

E. mensuraria, W. V.—Common on waste lands.

E. bipunctaria, Fab.—In July, 1845, I took several poor specimens at Hoylake. I have not collected there since.

E. multristrigaria, Haw.—Plentiful under tufts of grass in March.

Genus CIDARIA, Steph.

C. didymaria, Lin.—Everywhere.

C. erutaria, Boisd.—Stourton. July, on stone walls and bolls of firs.

C. salicaria, Hub.—Bidston Hill and Stourton. August.

C. ferrugata, Lin.—This insect is generally confounded with *Ferrugaria*, Boisduval, which is a variety of *Unidentaria*, Haw; it always occurs on hilly places, where heath and fern grow; is very distinct.

C. unidentaria, Haworth.—Abundant everywhere

C. pectinitaria, Fuessly.—Plentiful in woods where fern grows. June and July.

C. montanata, W. V.—Common everywhere in summer.

C. fluctuata, Lin.—Found everywhere.

C. propugnata, Fab.—Rather local, but plentiful in many thorn hedges. Saughal, Claughton, Wavertree. July.

Genus THERA, Steph.

T. firmaria, Hub.—Not scarce in Prenton wood, July.

T. simulata, Hub.—In fir woods, summer.

Genus ANTICLEA, Steph.

A. derivata, W. V.—In lanes and hedges between Oxton and Prenton. April.

G. badiata, W. V.—Where brambles grow. April.

Genus STEGANOLOPHIA, Steph.

S. ribesiaria, Dup.—Plentiful, Hale and Crosby.

Genus HARPALYCE, Steph.

H. suffumata, W. V.—Eastham and other woods.

H. silaceata, W. V.—Hale, Ditton, and Rainhill. June.

H. ocellata, Lin.—Plentiful at Wallasey. July.

H. galiata, W. V.—Common on the coast. Summer.

H. fulvata, W. V.—Plentiful on the coast. August.

H. chenopodiata, W. V.—Egremont and Rock Ferry.

H. marmorata, Hub.—Occurs in gardens, not plentiful.

H. pyraliata, W. V.—Plentiful in woods. June.

H. populata, Hub.—Stourton Quarry. August.

H. achatinaria, Hub.—Plentiful everywhere. July, August.

H. russata, W. V.—Plentiful in fir woods and plantations. August.

H. immanata, Haw.—Not so plentiful as the last species, but generally found with it.

Genus PHÆSYLE.

P. miata, Lin.—Where willows and sallows grow. July.

P. psittacata, Fab.—Eastham wood, Knowsley, and Speke. August.

Genus YPSIPETES, St.

Y. impluviata, W. V.—Where alders and willows grow. May and July.

Y. elutata, W. V.—Abundant in lanes.

Y. rubidaria, Bond.—In damp places where willows grow. Kirby, Hargrave Hall, and Woolton. July.

Genus CHEIMATOBIA, Steph.

C. dilutata, W. V.—Plentiful in woods. September and October.

C. autumnaria, Boisd.—Knowsley, near the quarry. October.

C. boreata, Hub.—Bidston birch plantations. October.

C. brumata, Lin.—Everywhere in autumn.

Genus LOBOPHORA, Curt.

L. lobulata, Hub.—Not uncommon in the woods around Kirkby and Simonswood in April.

L. sexalisata, Hub.—One taken in Croxteth wood. May.

Genus TRIPHOSA, Steph.

T. dubitata, Lin.—May often be observed upon ragwort flowers in August and September.

T. certata.—I think this was taken some years ago, near Runcorn, but that will be a mile or two out of our district.

Genus PHIBALAPTERYX, St.

P. lignata, Hub.—Plentiful around lamps at Otterspool, and in profusion on Bidston marsh. July.

P. gemmaria, Hub ?—Only two specimens have yet been taken, the first was taken by Mr. Diggles, at Birkenhead.

Genus EUCOSMIA, Steph.

E. undulata, Lin.—Eastham wood, among the large ferns. July.

Genus CAMPTOGRAMMA, St.

C. bilineata, Lin.—Abundant everywhere.

Genus MELANIPPE, Dup.

M. alchemillaria, Hub.—Plentiful in July.

M. amniculata, Hub.—Not uncommon about Flaybrick Hill and Noctorum.

Genus EMMELESIA, Steph.

E. rivulata, W. V.—Plentiful at New Brighton and at Broad Green. June.

E. hydraria, Tr.—Plentiful in old lanes where alders grow. June.

E. decolorata, Hub.—Plentiful with *Hydraria*.

E. albulata, Fab.—In profusion on marshy ground, flies about 4 p.m.

E. bifasciata, Haw.—Sparingly all around the district, especially on the borders of the sand hills. Requires beating out. July, August.

Genus ZERENE, Steph.

Z. albicillata, Lin.—Halewood and the Boorswood, Hale.

Z. rubiginata, W.V.—Plentiful in all the lanes leading on to the mosses. The variety *plumbata*, Curtis, is found freely in some places.

Genus ABRAXAS, Leach.

A. grossulariata, Lin.—Common in hedges.

A. ulmata, Fab.—In profusion in Croxteth plantations. July.

Genus BAPTA, Steph.

B. temerata, W. V.—Hale and Eastham, only a few taken. June.

Genus CABERA, Dup.

C. pusaria, Lin.—Common everywhere. July.

C. exanthemaria, Esper.—With *Pusaria*. July.

C. strigillaria, Esper.—Not uncommon in Kirkby Wood, &c.

Genus EPHYRA, Dup.

E. punctaria, Lin.—Hale, Eastham, and Bidston. Sits upon the dead leaves in woods, hence is difficult to observe.

Genus EUPETHECIA, Curtis.

E. linariata, W. V.—Plentiful where toad flax grows.

E. pulchellata, Steph.—Occurs sparingly all around the district. *Its food is not yet known.*

E. rectangulata, Lin.—In old orchards, local, but plentiful. Frankby, Linacre, and Hale.

E. tenuiata, Hub., 394.—Where sallows are plentiful. June. Feeds in the catkins.

E. plumbeolata, Haw.—Not uncommon amongst the *Myrica gale* on the mosses. July.

E. pygmeata, Hub.—Widely spread, but rarely taken in any quantity; flies in open places in woods, about 3 p.m., has no affinity to this genus.

E. satyrata, Hub. — Not uncommon on one part of Simonswood moss, near the plantation, and flies from six to dark. June.

E. abbreviata, Wood, 660.—Plentiful at the top part of Eastham wood, in April.

E. exiguata, Hub. Wood, 659.—Abundant in woods. April.

E. innotata, Knoch.—A few have been taken near the sand hills, suspected to feed upon the vetch in hedges.

E. indigata, Hub.—Prenton and Stourton woods, on fir trees. May.

E. nanata, Hub.—Plentiful where heather grows. July.

E. castigata, Hub.—Plentiful in lanes where inflated catch fly grows. June.

E. vulgata, Haw. Wood, 666.—Abundant about gardens.

E. absynthiata, Lin.—Ragwort flowers and in gardens.

E. minutata, Hub.—Prenton hill and wood, flying over heather. Evening.

E. assimilata, Doub.—On the coast about ragwort flowers at dusk.

E. centureata.—Common on the coast!!

E. succenturiata, Lin. Hub. 459 variety *Subfulvata*, Haw. Wood 675, and all the intermediate varieties, *Disparata*, Hub. 246 *Oxydata*, Tr. *Cognata*, St. &c., are taken together all around the district lanes. The light varieties are taken more freely than the dark ones, when on the wing at night.

E. subnotata, Hub.—Prenton, around the farm houses and gardens.

E. venosata, Hub.—Taken by Mr. Nixon, at Hale.

E. pumilaria, Hub. Wood 657.—Amongst gorse at Bidston Hill and New Brighton. April and August.

E. sparsata, Hub.—Taken amongst sallows, growing on the road side between Bromborough and Eastham.

Genus Dosethia, Dup.

D. virgularia, Haw.—Not uncommon in hedges.

D. scutularia, Hub.—Freely in mixed hedges where nettles grow.

D. reversaria, Tr.—Plentiful in lanes.

Genus Acidalia, Tr.

A. osearea, Hub.—In hedges near Leasowe sand hills.

A. holsericearia, Parr. — Below Bidston plantation, looking towards Moreton, in plantations where the ground is swampy.

A. luteata, W. V.—Bidston plantation, June.

A. candidata, W. V.—Eastham and Hooton, where hazles grow.

A. sylvata, W. V.—Bromborough wood, and beyond Hooton park in the rough plantations.

A. nitidaria, Boisd.—Plentiful on the mosses in June.

A. subsericearia, Haw.—Not uncommon on the pasture lands near the sand hills at Leasowe. A few taken in lanes around Bidston, &c.

A. remutata, Lin.—Plentiful in hedges in lanes.

A. aversata, Lin.—Abundant with *Remutata*.

Genus Pæcilophasia, Steph.

P. marginata, Lin.—In profusion in woods, Hale, Croxteth, and Kirkby. &c. June.

Genus Timandra.

T. imitaria, Hub.—Abundant in hedges about West Derby and Bidston hill.

Genus Bradyepetes, Steph.

B. amataria, Lin.—A few have been taken around Hale. First by Mr. Nixon. July.

Genus Strenia, Dup.

S. clathrata, Lin.—On the canal banks near Maghull. July.

Genus Hybia, Steph.

H. auroraria, Hub.—Not uncommon on the mosses in July, is confined to the dry ditch banks, flies in the afternoon.

Genus Chesias, Tr.

C. spartiata, Fab.—Plentiful amongst the broom growing beyond Hooton, and at Bromborough. October and November.

End of Geometra.

PART VI. SECTION 10.

FAMILY 1. TORTRICIDÆ.

Genus HALIAS, Tr.

H. prasinana, Lin.—Plentiful in woods where sallows grow, as at the Boorswood, Hale. June.

Genus SARROTHRIPA, Curtis.

S. rewayana.—A few have been taken, principally in plantations near the coast.

FAMILY 2.

Genus TORTRIX, Lin.

T. pyrastrana, Hub.—Plentiful.

T. xylosteana, Lin.—Plentiful in a nut hedge at Croxteth wood. August.

T. sorbiana.—Only four specimens have been taken. Little Britten wood.

T. rosana, Lin.—Abundant everywhere.

T. cinnamoneana, Tr.—Bromborough wood. Not plentiful.

T. heparana, W.V.—Abundant in hedges.

T. ribeana, Hub.—With *Heparana.*

T. unifasciana, Dup. Sup.—Plentiful in lanes.

T. spectrana, Tr.—Plentiful where coltsfoot grows. July.

T. viburnana, W. V.—Abundant on the mosses. July.

T. icterana.—Abundant amongst Knapweed. July, August.

T. viridana, Lin.—Abundant in oak woods. July.

T. ministrana, Lin.—Plentiful at Croxteth and other woods. July.

T. adjunctana, Tr.—Plentiful around old pits, and in mixed hedges. Anywhere.

Genus DICHELIA, Guen.

D. grotiana, Fab.—A few on the dry parts of the mosses. July.

Genus AMPHYSA, Curt.

A. gerningana, W. V.—Plentiful on Bidston Hill between the lighthouse and the mill. Flies about 9 a.m. and 5 p.m. July.

A. prodromana, Hub.—Stourton quarry, flies at 11 a.m. when the sun shines.

Genus LEPTOGRAMMA, Curt.

L. literana, Lin.—In old woods, especially where there are old lichen covered thorn trees growing. September.

Genus PERONIA, Curtis.

P. favillaceana, Hub.—Plentiful where beeches grow. September.

P. mixtana, Hub.—Plentiful on dry banks, where gorse and heath grow. Bidston, Stourton, &c. October.

P. schalleriana, Lin.—Not abundant, mixed hedges about Prenton. August.

P. comparana, Hub.—Abundant in hedges. August.

P. potentillana, Cooke N. S.—Plentiful on strawberries, West Derby. July and September.

P. caledoniana, Bentley.—Plentiful amongst *Myrica gale* on the mosses.

P. abildgaardana, Fab.—Plentiful amongst roses and thorns. August.

P. permutana, Dup.—Plentiful amongst the spiney rose on the sand hills. August.

P. hastiana, Lin.—Plentiful on sallows around old pits, Bidston. Sept.

P. furrugana.—Plentiful at Eastham wood. September.

P. tristana, Hub.—A few taken from sallows near Eastham. August.

P. aspersana, Hub.—A great many bred from meadow-sweet, is also to be found amongst the sallows on the sand hills.

Genus TERAS, Tr.

T. effractana, Tr.—Croxteth wood. September.

T. caudana, Fab.—Croxteth wood and Prenton lane, in profusion.

Genus DICTYOPTERYX, Steph.

D. contaminana, Hub.—Abundant in hedges. August.

D. læflingiana, Lin.—Plentiful in old lanes and edges of woods.

D. holmiana, Lin.—Abundant in the thorn hedge on the sand hills beyond New Brighton. August.

D. bergmanniana, Linn.—In profusion amongst the roses on the sand hills, July, August.

D. forskaleana, Lin.—Plentiful throughout the district.

Genus ARGYROTOZA, Steph.

A. conwayana, Fab.—Plentiful in lanes. June.

Genus PTYCHOLOMA, Steph.

P. lecheana, Lin.—Plentiful in woods.

Genus DITULA, Steph.

D. semifasciana, How. Bred freely from willow leaves collected at Crosby sand hills.

Genus PENTHINA, Tr.

P. picana, Tr.—Plentiful at Kirkby wood, and at the Hut of Huts.

P. betuletana, Haw.—Kirkby wood amongst the birches.

P. pruniana, Hub.—In mixed hedges anywhere. July.

P. ochroleucana.—In gardens, July.

P. cynosbana, Lin.—In gardens on roses, anywhere.

P. ochromelana, Guen. — On the fallows around Simonswood Moss. June, July.

P. marginana, Haw.—A few specimens only with *Ochromelana.*

Genus ANTETHESIA, Steph.

A. salicella, Lin.—I found this insect freely near Huyton, in a mixed hedge.

Genus SPILONOTA, Steph.

S. ocellana, W. V.—Old thorn hedges, July.

S. aceriana, F. R.—Not uncommon at Egremont.

S. dealbana, Fr.—Rock Ferry to Bromborough Pool on the river bank sallows.

S. neglectana, Dup.—Marsden's road, Liscard, poplars, plentiful. July.

S. amænana, Dup. Sup.—Amongst the roses on the sand hills, abundant. July, August.

S. suffusana, Kuhl.—Not scarce around old ponds near Bidston. July.

S. rosæcolana, Doub.—With *suffusana.*

S. roborana, W. V.—Where roses grow. July, August.

Genus PARDIA, Guen.

P. tripunctana, W. V.—Amongst roses in gardens. June, July.

Genus NOTOCELIA, Steph.

N. udmanniana, Lin.—Common where brambles grow. July.

Genus SERICORIS, Tr.

S. cespitana, Hub.—Abundant on the sand hills. July, August.

S. conchana, Hub.—Wallasey sand hills, scarce; Hale Marsh, in profusion. July.

S. lacunana, W. V.—Everywhere.

S. urticana, Hub.—In old lanes, common.

S. ——— N. S. ?—Bred from *Myrica gale.*

S. decrepitana, Fr. R.—Two specimens taken at Hoylake are all I know of.

Genus MIXODIA, Guen.

M. schulziana, Fab.—Plentiful on the wet parts of the mosses at Simonswood; a few at Hale. July, August.

Genus ROXANA, St.

R. arcuana, Lin.—Hooton, freely.

Genus ORTHOTÆNIA, Steph.

O. antiquana.—Taken in old pastures, and upon the Fender banks, Bidston Marsh. Not abundant. July, August.

O. trifoliana, Zell.—Sometimes abundant flying over Clover and Lucerne fields. I think its eggs are imported with the seed. July.

O. striana, W.V.—Plentiful at Gill brook, and on the Fender banks, Bidston marsh. June.

Genus ERIOPSELA, Guen.

E. fractifasciana, Haw.—Ditton marsh, and Halewood road, near the finger post. July.

Genus CNEPHASIA, Curt.

C. lepidana, Curt. —Plentiful amongst the young firs on the mosses. April, July, and August.

C. musculana.—Plentiful anywhere.

Genus SCIAPHILA, Tr.

S. subjectana, Guen.—Everywhere.

S vergaureana, Tr.—Plentiful about elms. July.

S. alternana, W. V.—I once took a few of this insect in Prenton lane. July.

S. octomaculana, Haw.—A few at Stourton.

S. hybridana, Hub.—Thorn bushes at New Brighton and Wallasey.

Genus SPHALEROPTERA, Guen.

S. ictericana, Haw.—In profusion everywhere.

Genus CAPUA, Steph.

C. ochraceana, Steph.—Boorswood, Hale. May.

Genus CLEPSIS, Guen.

C. rusticana, Tr.—On the fallows around Simonswood moss. May, June.

Genus BACTRA, Steph.

B. lanceolana, Hub.—Common where rushes grow. June to August.

B. furfurana, Haw.—Around the parish sand pits behind New Brighton, and also in some old pits on the West Derby road, near Tue Brook. July.

Genus PHOXOPTERYX, Tr.

P. siculana, Hb.—Bred from *Myrica gale*, collected on Simonswood moss. May.

P. unguicana, Lin.—Bidston Hill, June.

P. uncana, Hb.—Bidston hill and Prenton hill. End of May.

P. comptana, Fr.—Plentiful at Flaybrick hill, and with *uncana*.

P. biarcuana, Steph.—Amongst the sallows at Crosby, freely. May.

P. myrtillana, Tr.—A few may still be found at Flaybrick hill. End of May.

P. lundana, Fab.—Abundant everywhere.

P. diminutana.—Three or four taken above Bebington, are all I have seen here. May.

P. mitterbacheriana, W. V.—Everywhere. June, July.

Genus GRAPHOLITA, Tr.

G. paykulliana, Fab.—Plentiful in Bidston plantation, amongst the birches. September.

G nisella, Lin.—May be beat from the sallows about Hooton and Spittal, in August and September. Feeds in the catkins.

G. nigromaculana, Haw.—Abundant where rag weed grows. August.

G. compolitana.—Generally distributed.

G. trimaculana, Don.—Plentiful on the Cheshire side.

G. penkleriana, W. V.—A few may be taken in oak woods, and I have taken a few on Flaybrick hill. May.

G. nævana, Hub.—Abundant where holly grows. Rake lane, Edge lane, West Derby, &c. July. Very variable.

Genus PHLÆODES, Guen.

P frutetana, Hub.—Abundant amongst alders, beyond Croxteth.

P. immundana, Fv. R.—Rather difficult to find around here; Daysbrook and Walton. July.

P. geminana, St. N. S.—Plentiful on the wet parts of the mosses. July, August.

Genus HYPERMECIA, Guen.

H. augustana, Hub.—In profusion on the Crosby sand hills, feeds on the long leaved willow which grows there. June.

Genus BATODES, Guen.

B. augustiorana, Haw.—Local, about old gardens in which large pear trees are growing.

Genus PÆDISCA, Tr.

P. bilunana, Haw.— Croxteth and Prenton. June, July.

P. corticana, W. V.—Abundant on old oaks. August, September.

P. opthalmicana, Hub.—Old lanes around Tranmere and Rock Ferry. Plentiful. August.

P. occultana, Doug.—Plantation in Dacre park and Prenton, where spruce firs grow. Plentiful. July.

P. solandriana, Lin.—Abundant where birches grow. August.

P. sordidana.—Abundant where sallows are growing in damp places on the sand hills. July, August.

Genus EPHIPPIPHORA, Dup.

E. dissimilana, Fr.R.—Plentiful on young birches beyond Hooton, and at Simonswood.

E. scutulana.—Plentiful where thistles grow. May.

E. brunnichiana, W. V.—Common on coltsfoot.

E. trigeminana, Steph.—Abundant on clay banks around Birkenhead, &c.

E. ephippana, Hb.—Abundant at Crosby on the sallows.

Genus OLINDA, Guen.

O. ulmana, Hb.—Upton and Parkgate, old hedges. July.

Genus SEMASIA, Guen.

S. janthinana.—Not scarce at Wallasey. July.

Genus COCCYX, Tr.

C. splendidulana, Guen.—Very few taken in the district. The pine covered hills from Bidston to Stourton have produced me about six specimens.

C argyrana, Hub.—Oak woods abundant. April.

C. hercyniana, Bect.—Plentiful where silver firs grow, Croxteth park, &c. May.

C. vacciniana, Tisch.—Formerly not scarce at Flaybrick hill.

Genus RETINIA, Guen.

R. buoliana, W. V.—Small firs at Jackson wood and Bidston. July.

R. pinicolana, Doub.—More plentiful than *buoliana* in the same locality, and at Prenton.

R. pinivorana, Zell.—In company with the two last species, but generally wasted when they are fine.

Genus STIGMANOTA, Guen.

S. coniferana, Rat.—Fir woods in Cheshire, especially where they have been burnt.

S. perlepidana Haw.—Rough plantation near Hooton. April, May.

S. composana, Fab.—Eastham wood. May.

S. floricolana.—Hargrave Hall, on the large sycamore tree at the end of the house. Freely. July.

S. germerana, Hub.?—Around Tranmere, in old lanes amongst sloe bushes.

Genus DICRORAMPHA, Guen.

D. politana, W. V.—On grassy banks near Rock Ferry. June.

D. petiverana, Lin.—On grassy banks near New Brighton, when the sun is out. Plentiful. July.

D. plumbagana, Tr. —Borders of swampy places on Bidston marsh, evening. June, July.

D. caliginosana, Tr.—Ditch past the gate in Croxteth park, a little beyond R. Wright's farm. July.

D artemesiana, Bent.—Abundant where tansey grows. June and July.

Genus PYRODES, Guen.

P, rheediana, Lin.—Edge lane, Oxon, and Upton. April morning. Is a sun flier.

Genus CATOPTRIA, Guen.

C. ulicitana, Haw.—Wherever gorse grows.

C. hypericana, Hub.—Waste lands near Flaybrick hill, and wherever Hypercum grows.

C. hohenwarthiana, W. V.—Plentiful near old ponds in pastures. May, June.

Genus CHOREATES, Tr.

C. scintillulana, Hub.—Quarry at Wallasey, near Poulton Bridge.

Genus SIMÆTHIS, Leach.

S. fabriciana, Lin.—Where nettles grow.

Genus EUPŒCELIA, Steph.

E. atricapitana, Steph.—Freely around the sand hills. May, July, August.

E. maculosana, Haw.—On the blue hyacinth flowers in Eastham wood. May.

E. angustana, Hub.—Where gorse grows. Summer.

E. affinitana, Doug.—On marshy places all around the district. June.

E. humidana, Fv. R.—Bidston and Ditton marshes. July.

E. rossana, Haw.—Bred from teazle heads which grow upon Bidston marsh.

E. ruficiliana, Haw.—Stourton quarry, Wallasey Pool.

Genus XANTHOSETIA, Steph.

X. zoegana, Lin.—Plentiful on pasture land. July. Dusk.

X. hamana.—Always with *zoegana*.

Genus CHROSIS, Guen.

C. tesserana, W. V.—Woolton and Garston old pastures.

Genus ARGYROLEPIA, Step.

A. baumaniana, W. V.—Bidston plantation. August.

A. badiana, Hub.—Same place. July.

A. cnicana, Doub.—Bidston marsh. July.

Genus COCHYLIS, Tr.

C. smeathmanniana, Fab.—Very rarely seen. Old wet grass lands. July.

C. stramineana, Haw.—Abundant in grass lands. June, July.

Genus APHELIA, Curt.

A. pratana.—Abundant everywhere. July, August.

Genus TORTRICODES, Guen.

T. hyemana, Hub.—Swarms in oak woods. April.

End of TORTRICES.

THE PEOPLE OF THE ENGLISH LAKE COUNTRY, THEIR ORIGIN, HISTORY, AND CHARACTER.

By A. Craig Gibson, Esq.

(Read 7th May, 1857.)

Of that romantic tract of country now so well known as the lake district, the earliest inhabitants of whom any distinct traces remain, whether in history, tradition, archæology, or local nomenclature, were a Celtic tribe, who, it is supposed, effected a settlement in this part of England about four centuries before the Christian era. To these earliest colonists, called by some authorities, Hiberno Celts, is attributed the erection of the most important of those monuments of British Antiquity in which the district abounds. They have also left numerous proofs of their occupation of the country in the names of parishes, villages, mountains, lakes, and rivers.

A century or two later—the exact date being uncertain—another tribe, thought to be Cambro-Celts, also appear to have established themselves in the lake country; and of them, likewise, very distinct traces still exist in the nomenclature of the district. These were probably joined from time to time by other colonists of the same race, and this region was possessed most likely by all these conjointly up to the period of the Roman occupation, which was effected about the middle of the second century. One of the most acute and best informed of those writers who have lately turned their attention to the ethnology of Cumberland and Westmorland, as indicated in the local etymology—I mean Mr. Sullivan, of Kendal—discovers, in the signification of certain names of places, proof that the Romans were not allowed to take unopposed possession even of this remote and comparatively poor portion of Britain; and their many strongholds, including encampments so extensive that Camden calls the remains of that at Ambleside "the carcass, as it were, of an ancient city," with the numerous smaller forts connecting those, and forming chains of communication in all directions throughout the district, shew that they had to hold

their ground chiefly by the strong hand. It is only in history and in archæology that proofs of the Roman occupation of this district are found. The habit of that people of adopting the native names of places, merely softening them a little to suit their own more fastidious ears, accounts for the fact that, with the exception of one or two "casters," there are few names to which even a partially latin etymology can be assigned.

After the evacuation of the country by the Romans, whether that were voluntary or compulsory, it is probable that the inhabitants of the lake country suffered severely from the inroads of the Picts and Scots. That they were ever entirely subjugated or supplanted by those less civilized races is not probable. But, after the coming of the Saxons to within a little more than a century of the Norman conquest, it would seem that the Britons of the lakes were alternately subject to, and independent of, that people, and occasionally occupied the same territory with them on terms of comparative amity, as may be inferred from many names of places being compounded of British and Saxon words. Their subjugation by the Saxons is certain; for in the seventh century, as is well known, the Saxon king of Northumbria made over to St. Cuthbert, Carlisle and the country fifteen miles round it, which territory approaches pretty nearly to the northern confines of the lakes, while at the southern extremity of the district he gave him Cartmel, a tract of country at the foot of Windermere, and all the Britons upon it. We know also, that at the same period a Saxon priest, St. Herbert, lived unmolested in his hermitage upon the island in Derwentwater, which still bears his name. The story of the friendship of this recluse with St. Cuthbert, of their annual meetings, and coincident death, forms a very beautiful chapter in our ancient chronicles. In later times, forty days' indulgence was granted to all who attended the annual celebration of mass on St. Herbert's isle, instituted in commemoration of these two saints.

That the Britons of the lakes threw off the Saxon yoke is proved by the fact, that in the tenth century Cumbria, including Strathclyde and Galloway, was ruled by a British prince, Dunmail, who, in 945, was defeated in a decisive battle by the Saxon Edmund, aided, strangely enough, by Leoline, king of South Wales. Some historians, and all traditions, say that the last British king of Cumberland was slain, with most of his army, and buried where he fell. The vast cairn heaped over him, through which

the high road passes from Ambleside to Keswick, and over which is built the boundary wall between the two counties, still bears the name of "Dunmail raise." Others say he escaped, and died many years afterwards in Rome. The locality of this battle is nearly central to the district, and whatever may have been the fate of their king, this fact, and the accounts of Edmund's cruelty to the sons of Dunmail, would lead us to infer that the inhabitants of the district were not spared; and I am inclined to agree with those who hold that the remnant of these Britons, after this crowning disaster, sought an asylum amongst their brethren in North Wales. The country was given to the king of Scotland, and it does not seem probable that the conquerors settled amongst the hills to any important extent; for we read that fifty years later it was again cruelly devastated by the Saxons, and represented by them to be, at that time, the principal rendezvous of the Danes; who, probably invited by the abandoned state of the district—its low shores, and numerous creeks and estuaries, offering great facilities for landing—were now beginning to take possession, first of the levels and slopes lying between the mountains and the sea, and then gradually of the dales opening to the west. The balance of proof is heavily in favour of the supposition that these Danes, or rather Norwegians, are the principal stock from which the present inhabitants of the mountain district are descended. We find, indeed, in the Domesday survey, which came as near to the lakes as Low Furness, that many of the land owners there, prior to the conquest, had Saxon names, and amongst them was the Earl Tosti, brother of king Harold. But Furness, though now reckoned part of the lake country, was never included in the ancient kingdom of Cumbria, and would not be subjected to the devastations inflicted on the more northern territory. Its inhabitants were probably able to hold their own against the incursions of the "marauding Danes"; whilst, if any of the original British possessors of the soil farther north remained, it is more than likely they were so weakened and dispirited, that the Norsemen found little difficulty in displacing or exterminating the miserable few that might still cling to their ancient homes. That these two races, supposing any Britons did remain, ever amalgamated in any considerable degree, I hold to be extremely unlikely. Besides the scarcity of British words in the dialect, and the positive absence of any Celtic elements in the physical constitution, the habits, manners, and dispositions of the dales people, it is well known that hatred of the Sassenach, in which term they include all strangers, has ever

been, and still is, a ruling sentiment with all the Celtic tribes in these islands; and I can answer for this feeling being cordially reciprocated by the English mountaineers. There is more to be said, too, than my limits will allow, against the supposition that there is much Saxon blood in their veins. I shall merely glance at the circumstances that there are few words peculiar to the dialect of the district that may not be traced, without difficulty, to Scandinavian roots; that many of these words are still used in Denmark, Norway, and more especially in Iceland, which was colonized by the same people, and about the same period; and that in Chaucer, whose works contain more ancient Saxon words and phrases than those of any other well known writer, we meet with very few words now used in Cumberland, and the few we do find are those common to the dialect of that province and lowland Scotch, in which the Saxon element is more evident. Finally, if the great Norman barons, amongst whom William apportioned most of the lands in Cumberland, Westmorland, and Furness, located any of their followers amongst the population they found in possession, it does not appear that they were in such numbers as to affect their character or their language.

After the annexation of Cumberland by William, and his bestowal of seignorial rights over it upon his great leaders, it would seem that the bulk of the people there, as in other parts, were in a state of villeinage or serfdom, and were bought, sold, and given away as part of the estates on which they resided. In the charter by Stephen, Earl of Mortagne, afterwards king, granting certain lands and privileges to the Abbey of Furness, which he founded in 1127, we find that he makes over to the monks—"Dalton and all his lordship of Furness, with the *men* and everything thereto belonging, that is in woods and plains, in land and water; and Ulverstone and Roger Braithwaite with his possessions," and so on.

For about four hundred years from the middle of the twelfth century, the ecclesiastical must have been the predominating influence in this hill country. The district was, indeed, environed by almost a cordon of wealthy and religious houses. Besides Furness Abbey it had on the south the priories of Conishead and Cartmel. On the eastern confines was the abbey of Shap. On the north-east, but more distant, stood the fair priory of Lanercost, and that of St. Mary of Carlisle. To the north was the famous abbey of Holme Cultram; and the west had the priory of St.

Bees, the beautiful abbey of Calder, and the nunnery of Seton. Of these, Furness Abbey was the most powerful, and the most intimately connected with the district under consideration. Besides holding extensive possessions in other parts of it, the abbot for the time being held sway as lord paramount over the whole liberty of Furness, comprising some of the richest and most picturesque portions of the lake country; and though Furness contained five families of knightly rank, besides a numerous squirearchy, all these paid homage and fealty to the abbot, who also had supreme control over the military establishment of the district, each of the mesne lords and free homagers raising his proportion of armed men at his summons.

There can be no doubt but the rule of the monks was vastly beneficial to the lake country, in developing its natural resources—in directing and encouraging the industry of the people—improving agriculture, and bringing wastes into cultivation—carrying out mining and smelting operations—and lastly, for which their memory ought ever to be held in reverence, setting the example of enfranchising the serfs, elevating from a state of slavery to that of free tenantry, not only their own vassals, but those of their lay neighbours. There is an ancient document extant by which a lay lord assigns one of his "natives," with all his retinue and chattels, to the abbot and monks of Calder—"so," as it runs, "that from this time they may be free and exempt from all state servitude and reproach of villeinage from me and my heirs." The great poet of the lakes, in his verses on St Bees, thus refers to these beneficent priests:

> "Who with the ploughshare clove the barren moors,
> And to green meadows changed the swampy shores;
> Thinned the rank woods; and for the cheerful grange
> Made room, where wolf and boar were used to range?
> Who taught, and shewed by deed, that gentler chains
> Should bind the vassal to his lord's domains?
> The thoughtful monks—intent their lord to please,
> For Christ's dear sake, by human sympathies."

The spiritual wants of the inhabitants of the more remote parts of their jurisdiction were attended to by members of those communities stationed amongst them, or, where the population was more scanty, by occasional visitation. An old building is still in existence at Hawkshead where one or two priests from Furness resided, and where the Abbot's bailiff collected

the abbey dues, and administered justice in the name of his lord. There is also a tradition that a monk from Furness resided at a place called Bank Ground, on the eastern shore of Conistone Lake; and other localities have similar traditions. Of the visits of the priests to the wilder parts, I once discovered an interesting relic. At a farm house in the "unfinished" vale of Seathwaite, I noticed that the cats fed from a vessel of uncommon form and material. On examination this proved to be a small square font or piscina, which in the old time, no doubt, held holy water when the priest came up the dale to administer the rites of his church to the few inhabitants of that still thinly peopled locality. It was made of white sandstone, of which there is none in Seathwaite, had a cross well sculptured in relief on one of its four sides, and had been found, not long before, in a little stream close to the house.

After the Reformation we have few data on which to base any distinct notion of the ecclesiastical state of the dales' people, but we know that two of the earliest protestant archbishops sprung from this district—Edwin Sandys, of York, from an ancient family located at Hawkshead, and Edmund Grindal, of Canterbury, from a yeoman stock at Hensingham, and that each founded and endowed a grammar school in his native parish. As they were thus solicitous about the educational interests of their native district, we may hope that these distinguished prelates did not overlook its religious requirements. Nearer to our own times the clergy of the dales were not in such a position as the friends of the church would desire. Most livings were miserably small, many without residences, the incumbent living at Whittlegate, that is, exercising the privilege of using his knife at the different tables in his chapelry, in some rotation arranged according to the value of the holdings; and, besides being obliged to act as parish schoolmasters, the clergy had in many cases to resort to labour the most derogatory to eke out a livelihood. The undignified position in which they felt themselves, the dull monotony of their week day lives, and perhaps the constant temptation presented by the little public house always seen in the dales, illustrating the old rhyme, too often led to habits much more degrading to the cloth than any secular labour. It is, however, consolatory to know that the present clergy there, as they are better supported are likewise, in all respects, better fitted for their duties than most of their predecessors. This rude outline of the religious history of the dales' people would not be complete without noticing that there are a few Baptist

chapels, some as old as the time of the Commonwealth, scattered over the district, as well as several Quaker meeting houses, dating from the era of George Fox, who married a wife, and made many converts there. It is well known that the early quakers did not exhibit the unobtrusive and placid deportment that signalizes their descendants. And it is probable that their energetic preaching and bold defiance of order, more especially their frequent bearding of the little respected law, and often of clergy, during service in the churches, captivated the fancy of a people from whom a fearless assertion of principle has always won respect.

The feudal condition of the dales' people after the suppression of the monasteries was probably the same as for ages before, though some of their rights were disputed, and it is also probable that the church vassals would find their new superiors hardly so considerate and indulgent as the benevolent monks. The bulk of the population consisted of small copyholders and customary tenants, who occupied tenements of various extent, paying certain dues to the lords of the manors, and affording them a fixed amount of armed support in time of war. For many ages the habits of this people were especially warlike. And of this, a curious evidence is preserved in the well known boast of Sir Lancelot Threlkeld, a stout Cumbrian knight, who married the widow of the Lord Clifford that murdered the young Earl of Rutland, and was himself slain at or before the battle of Towton. Sir Lancelot's boast was, that "he had three noble houses; one for pleasure, Crosby in Westmorland, where he had a park full of deer; one for profit and warmth, namely, Yanwath, nigh Penrith; and the third, Threlkeld, on the edge of the vale of Keswick, well stocked with tenants to go with him to the wars." Their restless neighbours, the Scots, kept them constantly on the 'qui vive' to repel inroads, and to make reprisals; and we find also, by many records, that they had ever and anon to muster and march under their respective leaders, not only to the wars against the Scots, but to take part in all the great civil commotions that have convulsed this country. During the wars of the Roses nearly all the gentry of the lakes plunged with their tenantry into the conflict, mostly declaring for the house of Lancaster, though Richard of Glo'ster made many friends on the eastern side of the country during his residence in the castle of Penrith. The tomb of another Cumbrian knight of that period,

in the little church of Muncaster, bears the following suggestive inscription (in old English):

Of your charitie preye for the sowl of
Sir John de Penyngton sonne of Sir Alan de Penyngton who
hadde to wyffe Elizabeth dowter of Sir Nichols de Radcliffe
de derwentwater a woman of noble blude yis Sir John
ressebed hollie Kynge Harrye whyche was Henry ye Sixth at
Molcaster 1461 Kynge Harrye gave Sir John a braude workyd
glasse cuppe with his Rod before yat whylles the
famylie shod keep hit unbrecken thei sholde gretely thrif
whyche cuppe is kalled the luck of Molcastre
He was a grete captain and heded the left winge of the armie
agayne the Scotties whylles Erle of Northumberland heded
the mayne bodie

The attempt of Lambert Simnel upon the crown was fatal to one old Furness family, said to be of Saxon descent. Sir Thomas Broughton, of Broughton, with his array, joined Martin Swart and his Flemings when they landed in Furness, with the Irish Geraldines, to support the claims of that impostor, and was slain at the battle of Stokefield, or, as some pretend, escaped and lived for many years in concealment amongst his tenants in Witherslack. However the fact might be, the name was extinguished, and the estate given by Henry VII. to his stepfather, the Earl of Derby.

In the disastrous rebellion of the northern lords in Elizabeth's time, the lake gentry bore a part; and I have been told—I cannot say on what authority—that the first rendezvous of the leaders in that rising was at Hawkshead. In the great civil war of the seventeenth century, nearly all the gentry of the district declared for the king, and suffered severely for their loyalty. The Philipsons of Windermere were so impoverished that they never recovered their former position, and have since disappeared. The Kirkbies of Kirkby, also, never entirely rallied from their losses in the royal cause. The same may be said of the Huddlestones of Millom, a family who boasted a pedigree reaching five generations beyond the conquest. Nine brothers of this house held commands in Charles' army; and the eldest, Sir William, raised for the king's service a regiment of horse and one of foot, the latter of which he maintained at his own cost during

the whole war; and for his bravery at Edge Hill, where he retook the royal standard, was made a knight banneret on the field. The young Earl of Derwentwater's fatal share in the affair of 1715 is well known, but there is no record of his Cumbrian tenantry being with their lord at the unfortunate occupation of Preston. In 1745, though it is believed that several of the Cumbrian gentry were pledged to join Charles Edward, fortunately for them they were arrested, and held in durance till all was over, and so prevented imperilling their lives and estates without wilfully violating their pledges. Though the military spirit of the people has lain almost dormant for two centuries, events have occurred in the meantime to shew that the old readiness to act has not been dead in them.

Of the people of this district in our own times, it may be said in the first place, that in their physical attributes they are probably the finest race in Her Majesty's dominions. Their Scandinavian descent, their constant exposure to a highly oxygenized atmosphere, their hereditary passion for athletic sports and exercises, their happy temperament, their exemption from privation—real poverty being very rare amongst them—and many other causes have contributed to develope and maintain this physical pre-eminence, and to enable them to enjoy as pastime an amount of exposure and fatigue that few but themselves would willingly encounter. Thomas de Quincey, who lived thirty years amongst them, observed them closely, and knew them well, after remarking that "it is the lower classes that in every nation form the fundus in which lies the national face, as well as the national character," says—"Each exists *here* in racy purity and integrity, not disturbed in the one by alien intermarriages, nor in the other by novelties of opinion, or other casual effects derived from education and reading." Again writing of tho gatherings at the auctions amongst the hills, still favorite holiday occasions with the people, the same author says, "There you saw old men whose heads would have been studies for Guido; there you saw the most colossal and stately figures amongst the young men that England has to shew; there the most beautiful young women. There it was that sometimes I saw a lovelier face than ever I shall see again." The eloquent Opium Eater gave the strongest possible proof that his admiration was real, by taking one of these "beautiful young women" to wife. I may mention in connexion with this part of my subject, that the different regiments of lifeguards, which require the tallest and best formed men the nation can furnish, are largely recruited from the lake counties, as also is

the Liverpool police, a circumstance which no doubt goes far towards making that body, what it certainly is, the finest civil force in the kingdom.

The dales people are also remarkable for longevity. I have seen in a cottage the living representatives of the extremes of five generations, and in another adjoining, a family of children who had fourteen living ancestors,—their parents, their grand-parents, and all their eight great-grand-parents being still alive. Statistics show that in some of the parishes the proportion of those who survive the age of fourscore is as one in six; the general average of the kingdom giving only one in thirty-two. These are remarkable proofs of the salubrity of the district.

The morals of the Fell folk are those of most rural communities—not inferior certainly to those of their more pretentious neighbours over the border. Miss Martineau is the only writer who speaks out on this subject, as, indeed, whether right or wrong, she does upon most others, and I gladly lay the responsibility of censure upon one so able, and so willing, to bear it. This lady says,—"Scarcely anything can be conceived more lifeless, unvaried, and unideal, than the existence of the dales people and their families; and where the intellect is left so idle and unimproved as among them, the sensual vices are sure to prevail. These vices rage in the villages and small towns, and probably no clergyman or justice of the peace will be ever heard speaking of the rural innocence of the region,—which is, indeed, only to be found in works of the imagination. The people have their virtues, many and great," and so on.

In their social and domestic relations, there is much that is admirable. The hearty and genial tone of their ordinary intercourse is scarcely less pleasing than their active sympathy with, and generous readiness to assist, those neighbours who are visited by misfortune, of which instances innumerable have passed under my own observation. Open-hearted charity and hospitality still form a large portion of the character of the dales people though the great increase of tramps, and of tourists, in their country, rendering its general bestowal impossible, makes its existence less obvious than formerly.

Except on some very exciting occasions, they rarely allow their feelings to carry them beyond the placid demeanour of their every-day life. Their

matter of fact nature makes them regard with indifference, if not with contempt and dislike, any highflown expression of sentiment. They are not distinguished by the romantic or poetic temperament that characterizes the natives of other mountain districts, and certainly possess none of that exaggerated attachment to their country that is said to affect Swiss mercenaries and Highland soldiers so inconveniently on foreign service.

Of powerful attachment to home itself I have seen many instances in the lake country. I have known the sons of a ruined 'statesman, one after another, enter upon, as farmers, the land their fathers had held as proprietors, and that without hope of making it profitable. Respecting this feeling amongst the yeomanry of the lakes, Wordsworth says,—"Their little tract of land serves as a kind of permanent rallying point for their domestic feelings, as tablets upon which they are written, which makes them objects of memory in a thousand instances in which they would be otherwise forgotten."

In another particular they are unlike other mountaineers. Though singing, next to dancing, is the chief amusement at their frequent merry-nights, and the only one, besides drinking ale and smoking, at the sheep-shearings, they have no music native to the district. As to poetry, besides the poems and ballads written in their own dialect, and descriptive of their own life and manners, the works of Burns are all they hold in much esteem. Burns alone, of all poets, seems to reach their feelings and understandings. Wordsworth, who professed to draw his inspiration from humble life and common incident, they hardly recognise as a poet. Hearing him spoken of in Langdale, not far from his residence, by two intelligent old 'statesmen, as "the master of the stamp office," I enquired if they had ever heard of him as a poet? "O yes, they had heard he was a first-rate hand at THAT." Had they ever read any of his poetry? "They could not say they had."

The dalesmen don't pay much respect to any one who addresses them in language they are not accustomed to, nor do they make much allowance for ignorance of their own dialect. In a Cumberland village I once stopped to speak to an old lady at her door, and I began by remarking that the river was much swollen. "We call it a *beck*," said the old lady, turning her back upon me, and telling her grand-daughter to bring out the scrapple. "What may a scrapple be?" I asked, rather deferentially. "Why

that's what a scrapple may be," said she, indicating a coal rake in the girl's hand; and as I moved away thinking that "scrapple" was a tolerably expressive name for the implement in question, I overheard her say to a neighbour, "I don't know where he has been brought up—he calls t' beck a river, and does not know what a scrapple is!" They have a very quick sense of humour, and sometimes practice a little mystification on inquisitive strangers whose questions they consider uncalled for, by cramming into their answers as many obsolete provincialisms as their dialect can supply. Of this the most outrè of all the specimens I remember is the reply of a boatman on Ullswater to a tourist who made the somewhat stupid enquiry, "Does it ever rain here?" "Why it donks and dozzles, and sometimes gives a bit of a snifter, but it never comes in any girt pell," leaving the querist's stock of information very much as he found it. Their power of sarcasm is considerable, and so is their readiness in repartee; and of these I could adduce many examples did time and space permit.

Some of their superstitions are respectable. Besides the ordinary complement of mere vulgar apparitions, such as boggles, dobbies, headless women, and murdered pedlars, *et hoc genus omne*, there is the Castle rock of St. John, which on a certain night in each year becomes what it was "in good king Arthur's time,"—a real castle, with gates, drawbridge, banners, and warders complete; there is the boat full of spectral passengers, occasionally seen crossing Thirlmere at midnight from the foot of Helvellyn to the old mansion of Armboth, which is supernaturally lighted up for their reception and entertainment; there is, besides the luck of Muncaster, already alluded to, the more famous luck of Eden Hall, a similar cup with a similar prestige, but with a different story, having been reft from a fairy revel by a pot-valiant butler; there is the old gate at Grasmere, where, with sufficient faith, you may obtain whatever you wish for; there are the two skulls in the old hall of Calgarth, which always come grinning back in the morning, however they may have been disposed of over night; and many more, which we cannot stay to indicate.

Before concluding, I should wish to combat a reproach implied in the quotation I have given from Miss Martineau, in which that lady hints that the intellect of the dales people is left idle and unimproved. To say that a people occupied as they are, mainly in pastoral and agricultural pursuits, is an educated or studious people, were absurd; but I have

known many instances amongst them where a love of letters was cherished in most unfavorable positions, and also many, where a fair amount of general learning, and even of scientific knowledge, has been acquired under circumstances the most adverse to such acquirements. The case of Jonathan Otley stands prominently out as one of these instances,—the venerable mountain guide and geologist, who, born of poor parents, in the Vale of Loughrigg, and bred a basket maker, died, a nonagenarian, last winter, at Keswick,—and of whom, in an address to the young men of that little town, it was then well said, "Recently there was breathing and moving among them one whose regularity and temperance enabled him to carry, with a very slight stoop, the weight of 90 years. Years before most of them came into existence he settled among those scenes which he loved so long and so tenderly, as a humble but intelligent artizan; for he loved reading and was attached to study and thought. In those remote days there were no mechanics' institutes, no cheap lending libraries, but there was a strong will in this man to procure learning, and a strong will—as it ever must—provided a ready way. He read, not simply books, but nature; and he read his lesson well. He knew the depth of every lake and the height of every hill, for he himself had fathomed the one and scaled the other. Not a flower blossomed in our valleys, nor a fern waved on our mountain sides, but he knew its nature and properties, and had marked its beauty. He could tell of what materials the everlasting hills were bullt, and the interior structure of the mighty Skiddaw was as familiar to him as its outward form was to them."

But besides numerous minor lights of brave old Jonathan Otley's order, the lake country has produced some of the most eminent self-made men that the world has known. The poet, William Wordsworth, though a native of the district, may *not* be claimed as a self-educated man; but the painter, George Romney, the successful rival of Sir Joshua Reynolds, and said by Flaxman to be "the first of our painters in poetic dignity of conception," was the son of a Furness carpenter, and in early life worked for several years at his father's trade; the traveller, historian, and geographer, Sir John Barrow, was born in a very humble cottage near Ulverstone; and the philosopher, John Dalton, was the son of a poor weaver in a Cumberland village, and from the age of twelve had to support himself by teaching. Even this short list, which might easily be extended, should

suffice to refute any imputation of a low order of intelligence or indisposition to mental culture thrown upon the sparse population of this region. The writer of this imperfect essay was among them many years, occupied in the discharge of duties affording unequalled opportunities for studying the peculiarities of their mental, as well as their physical organization, and he believes that more favorable circumstances only are required to make them as remarkable for the development of their intellectual as already they are for that of their physical nature.

ON THE POPULATION OF LANCASHIRE AND CHESHIRE, AND ITS LOCAL DISTRIBUTION DURING THE FIFTY YEARS, 1801–51.

By J. T. Danson, V.P., and T. A. Welton, Esqs.

(Read 23rd April, 1857.)

Part First.

The communication of which this paper is a first instalment, originated in an effort to follow out one of the suggestions contained in a letter addressed to the Society by one of its members, in March, 1855, entitled, "Science in Lancashire and Cheshire," and the greater part of which was reprinted in the seventh volume of our Transactions.

It was determined to take the six enumerations of the people made by the Government in the years 1801–11–21–31–41–51, and extracting all that related to the two counties of Lancashire and Cheshire,—as the locality occupied by this Society,—to endeavour to elicit from the materials thus obtained, a connected account of the actual progress and distribution of the population over every part of our district during the fifty years thus brought to view.

The labor involved in this attempt was soon found to be very considerable. Its projector, however, fortunately found congenial and efficient aid. All the computations on which the paper is based have for some time been made, and are comprised in a mass of tabular matter, the whole of which is completed, and the greater part of which will be presented to the Society for publication. It only remains that the matter thus accumulated be divided into such portions (probably three) as may each be properly laid before the Society on a single evening, and accompanied by such commentary as may seem requisite to develop its more interesting and important features.

The usual and most simple purpose of a census, or numbering of the people, may be said to be two-fold :—

1. To ascertain the total number of persons living, at the date of the census, on a given area.

2. To ascertain how they are distributed over this area.

To effect the second of these purposes, a division of the area into parts, and a distinct enumeration of the persons inhabiting these parts, is necessary. And the value of the result will depend much upon the manner in which this division is made.

It is a familiar fact that the inhabitants of a country may be, and usually are, found spread over its surface in such a manner as to exhibit, in different localities, great varieties of density. And it is equally matter of common observation that the most important of these varieties, where it exists, is that which indicates the existence of towns. The rural and the urban life of our race have so long, and so invariably, exhibited incidents and effects of a widely different character, that in popular opinion they are rather contrasted than compared. But, though the difference has long been recognised, it has never yet been precisely defined. Nor is such a definition easily settled, or carried into effect. No division of the area of a country which should not mark *the precise boundaries of its towns* at the date of the census could be expected to exhibit, with any degree of accuracy, the separate numbers of its rural and urban population. And no such division has yet been attempted in this country.

Again, when we turn to the merely rural districts, we do not find the local divisions recognized in the census to be such as correspond with the different degrees of density of the population prevailing at the date of the first, or at that of any of the subsequent censuses now before us. Nor, indeed, do those divisions correspond, otherwise than vaguely, with any other of the remarkable phenomena which become visible on a careful examination of these voluminous records.

These defects of division, or rather these obstacles, alike to a ready comprehension and to a clear statement of the changes which have been taking place in the growth and local distribution of the people, are obviously traceable to the adoption, for the purposes of the census, of previously existing, and in most instances, very ancient local divisions.

These divisions had been made when the work of the census was not anticipated, and when, had it been anticipated, it could not have been provided for.

It is requisite, however, to bear in mind that even had new divisions been made at the date of the first census,—though these might have been such as materially to facilitate the use, for practical purposes, of that and all subsequent censuses,—yet as the subsequent growth of the population could not have been in any degree foreseen, the defect here referred to would still have been incidental, in some degree, to comparisons made between successive censuses, seeing that an altered distribution of the population is one of the most constant results of the mere lapse of time.

A single census can, of course, show only the numbers and the distribution of the people at the period at which it was taken. If a second be taken at a subsequent period, a comparison of the two will exhibit the changes made in the interval; and these changes will almost invariably be of two forms: of the total number, and of the local distribution. And every subsequent census, as it increases the number of records of these two particulars at successive periods, will suggest, and afford means of making, new comparisons, developing new changes in both respects.

The first general relation to be marked is that of the entire number of the people to the area on which they are living. The next is the same relation, in detail, of the population of particular localities to their area. Then particular localities divide themselves, as before observed, into town and country; and it becomes necessary to attach to the colloquial term "town" a definite or scientific meaning. This has not yet been done—a fact in itself sufficiently demonstrative of the small amount of attention and thought yet attracted to this subject. How it may best be done is not for us to say. It seems, indeed, that any correct and practically useful definition of a town must have reference simply to a given density of aggregation, occurring within an area of limited extent. In this view of the question the distinction of town from country must needs be, to some extent, an arbitrary one. The distinction, however, being established and applied, we are in a position to make a separate enumeration of the urban and the rural population, the latter, of course, including every variety of density below that fixed upon as constituting a town.

When a second census introduces the consideration of differences due

to the lapse of time, as distinguished from those incidental to various localities *at the same time*, we are confronted with further differences, as in the rate of change, whether by increase or decrease, in compared localities. One census presents us only with variety of contemporary density. Two will exhibit, also, differences marked by comparative increase or decrease in different localities absolutely, and also by variety of rate of increase, or of decrease with reference to the pre-existing population. A third census will develop still further differences, by comparison of the fact of increase or decrease, and its rate and amount, in the interval between the first and second, and between the second and third censuses; and the number and variety of these comparisons will similarly increase with each additional census.

It will be observed, that all the changes of detail here referred to, might take place among a population whose total number on the whole area should be stationary. On the other hand, a population, the whole mass of which should be continuously increasing, though it must needs show, at each successive census, a general increase of density, might yet show little or no change in the local distribution of the entire population, or little or no difference between the common rate of increase, and that incidental to particular localities.

In Lancashire and Cheshire, however, all the changes which can impart interest to an inquiry like the present, have undoubtedly been taking place. The population has been increasing, and that rapidly, during the whole of the period of fifty years here brought to view; and of this increase we have the records furnished by six censuses, taken at very nearly equidistant periods of ten years.

The two counties, fortunately for the separate treatment of them here attempted, now form one of the great primary divisions of England and Wales—the north-western district. Their total area is 1,874,230 acres. This area was peopled, at the date of the first census, in 1801, by 872,663 persons. In 1851 we find that the population upon the same area was 2,490,937; so that it was increased in fifty years by 185 per cent. Neither in 1801 nor in 1851 was the population distributed at all equally over the area occupied. Looking only at districts of considerable extent, there were many in 1801 which, on an average, had fewer than 100 persons to the square mile of 640 acres; and many more which had upwards of 500

to the square mile. And there were, in 1851, districts, but of smaller extent, which had in the preceding fifty years increased their population ten, twelve, and even thirteen-fold; while others, though these were few, not only had not increased at all, but had even a smaller population in 1851 than in 1801.*

We have said that at both the beginning and the end of the fifty years in view the people were distributed over the surface of the two counties with considerable irregularity. Popularly speaking, they lived partly in towns, and partly in the country. As already observed, the only distinction we can universally and consistently recognise, as marking the existence of a town, is the density of its population, as compared with that of the surrounding country. It is also obviously necessary to the purpose of the definition to confine it to aggregations of not less than a given number of persons, even though, in other instances, the required density be present.

The Registrar-General accepts, as a town, every aggregation of persons, so-called, and numbering not fewer than 2,000. But he disregards the element of density; and therefore gives no regard to the area on which this number shall be found congregated. The number—two thousand—as it appears to have been fixed upon after consultation with a large number of local authorities, and after careful consideration by those who were undoubtedly well acquainted with the results of several prior censuses, we take to be unobjectionable. But as we have now to deal with both town and country, and must divide their areas, we must also take the area of the towns into consideration. And for this purpose we have fixed upon 180 acres as the largest area, spread over which, 2,000 persons living together shall be deemed to form a town. This area has been fixed upon after repeated observation of the area actually occupied by such towns as are most common in Lancashire and Cheshire. It gives a total area of less than 200 square yards to each person; and about 1000 square yards to a family of average number. This, of course, is apart from any allowance for unoccupied spaces within the area of the town, or for the space occupied by roads, buildings, &c.

Now, taking these preliminary conditions, and applying them to the

* The average density of the population of England and Wales in 1801, was 153, and, in 1851, 307, per square mile.

census of Lancashire and Cheshire taken in 1851, we find that there were in that year within the two counties, so many as *fifty-three* towns ;* and that these towns then contained about two-thirds of the whole population, or 1,610,000 out of 2,490,000. The Registrar-General, under a less careful division of the two classes of population, makes the town population of Lancashire and Cheshire only 63 per cent. of the whole.

If we go back to 1801, and count the towns under the same rule, we find that they were then only twenty-nine in number, containing a population of 364,000. And as the entire number of the inhabitants of the two counties was then 872 600, it follows not only that the town population, at the beginning of the half-century, was very much less, (in absolute number,) than at its end, but that it also bore a much less proportion to the whole. The two forms of population had both increased, but they had greatly changed their numerical relation to each other. While the whole population had been trebled, that portion of it dwelling in towns of 2,000 inhabitants had increased nearly in the proportion of three-and-a-half to sixteen, or more than fourfold.

It is next to be observed that the towns of 1851, and therefore the chief groups of the denser population, are so placed together on the map, as at once to suggest the division of the tract of country now before us into four parts or regions. These regions are unequal in size, but they are sufficiently distinguished by the manner in which the towns lie grouped together, and by other local peculiarities, amply to justify their being dealt with apart.

In one of the tabular statements appended to this paper will be found a list of the registration districts included in each of the four regions, with the acreage of each district, its population in 1801 and 1851, and the rate per cent at which its population had increased in the interval. The following are some of the more striking results of an examination of the figures here referred to :—

Taking each region by itself, and disregarding the difference between town and country, we find that the Northern region includes five registra-

* The town of Todmorden is not included, as will be observed in the list appended to this paper. The greater part of the town is in Lancashire, and the rest in Yorkshire ; but the Registrar-General has placed it in the " Registration County " of York.

tion districts, the Eastern eighteen, the Western five, and the Southern seven, making a total of thirty-five.

Of the Northern region the area is 504,260 acres; and its population was increased between 1801 and 1851 by 55 per cent. Its chief town is Lancaster. It is by much the most thinly peopled.

The Eastern region is by much the most densely peopled of the four; and has been so all through the period in view. It includes the great "Manchester District," with which one of the authors of this paper has dealt in a previous communication to the Society. The density of its population has caused it to be divided into registration districts of smaller average area. Its total area—645,800 acres—does not very much exceed that of the Northern region. But its population was increased, in the same fifty years, by 203 per cent. Its chief towns are Manchester, Bolton, and Preston.

The Western district is comparatively small: only 231,900 acres. Part of it is very densely, and part but thinly peopled. It includes the populous districts on the banks of the Mersey; but it also comprises the extensive flats between the estuary of the Mersey and the Ribble. Its principal towns are Liverpool and St. Helens. Its population was increased in the fifty years by 307 per cent.

The Southern region has an area of 492,000 acres. It lies nearly all south of the Mersey, and so is nearly identical in area with the County of Chester. Its chief towns are Warrington, Congleton, and Chester. Its population was increased in the fifty years by 185 per cent.

Now, taking into our view the whole thirty-five registration districts making up the four regions, we observe that every one of them, from the borders of Westmoreland down to the southern confines of Cheshire, had a larger population in 1851 than in 1801. The increase, then, may be said to have been general. But in the comparative amount of increase there was a prodigious variety. And the further we descend into detail the greater do we find this variety—many parts of registration districts showing a decrease of their population, and some others exhibiting a transition, even within a few years, from the comparative stillness and solitude of a merely agricultural district to the crowded dwellings and busy hum of a densely peopled manufacturing town.

The smallest increase in any registration district was in Garstang—32

per cent. This is in the Northern region. But here the greatest increase in any one district was only 94 per cent. (in Fylde), and the general average, as I have said, is only 55 per cent.

The greatest increase in any registration district throughout the two counties was in Chorlton. Here it was 1226 per cent. This is in the Eastern (or Manchester) region--Chorlton being a small district of about 11,500 acres, lying between Manchester and the river Mersey, and whose population was increased, in the fifty years, from 9,300 to nearly 124,000, apparently without, in any instance, bringing together so many as 2,000 persons with a degree of density sufficient to constitute what we have agreed to term a town. The registration district in this Eastern region which showed the smallest increase in the fifty years was Chorley, a district of 52,000 acres in extent, and lying about midway, in a direct line, between Preston and Wigan.

In the Western (or Liverpool) region there was one registration district showing nearly as large a growth, in the fifty years as the largest above-mentioned. This was West Derby. Here, however, as with Chorlton, which had evidently received much of the overflowing population of Manchester, we find the cause in the immediate neighbourhood of a large and growing town, combined with those facilities of communication which at once enable and invite a large proportion of the active inhabitants of our great towns to spend their leisure and their sleeping hours away from the streets among which their daily labours are carried on. West Derby, at the beginning of the century a tract of country only partially suburban, had, in 1851, contributed a section of its area to the town of Liverpool, and nearly the whole of its surface to the suburbs.

The district of least growth in this Western region was Ormskirk, lying nearly in the centre of the level tract of country stretching from the mouth of the Mersey up to Preston. But even there it was 107 per cent. So that the district of least growth in the Western showed a larger increase than the one of greatest growth in the comparatively thinly peopled Northern region.

In the Southern region the greatest increase took place about Runcorn, and the least about Nantwich. Runcorn has had the advantage of lying at the head of the estuary of the Mersey, and at the starting point of the canal navigation which carries on the water-way thence towards Manchester,

and also up the valley of the Weaver. Runcorn is thus closely connected with the Eastern region, and might not improperly have been included in it. The town of Nantwich, and its neigbourhood, forms one of the remotest of the salt producing centres of the Weaver Valley.

In the same district, and only five or six miles east of the town of Nantwich, has sprung up, during the last fifteen years, the railway town of Crewe, which, in 1851, had a population of 4,500 persons. This addition to the population of the district, arising from the junction of the Chester and Crewe, the Manchester and Birmingham, and the North Staffordshire Railways with the Grand Junction line, at a spot before thinly inhabited, can scarcely be attributed to local influence And deducting the new population of Crewe, the slow progress of this Nantwich district becomes the more apparent.

We have, perhaps, now arrived at a point at which we may, without risk of confusion, regard the growth of the entire population with reference to the simultaneous growth of that portion of it dwelling in towns. And it is here that the importance of this enquiry becomes most apparent. The growth of the town population of the world is highly significant. It has already gone further in England than anywhere else; and so far as it implies concentration of all the various forms of human power, goes far to explain the dominant influence of the English people in the affairs of nations. We are, however, now concerned with the phenomenon itself; its causes, its progress, and its immediate effects upon our own district, rather than with its place in history, or its influence upon the national power or policy.

The inducements to a town life seem to be in every case nearly identical with the inducements to combined action; and these all resolve themselves into a real or supposed economy of power—of power to produce, to distribute, or to consume—implying new or additional means of obtaining subsistence, of finding amusement, or of exercising power. In England, the town population now forms more than half of the whole. This is a proportion never before attained in any other country, and at least three times as great as exists in any like extent of country in the world. But it does not follow that the balance of town and country has, on the whole, been so much disturbed as at first sight might from this single fact be

inferred. Beef and corn cannot be raised in towns; nor can other articles, of equal necessity, or nearly so, be produced, with economy, in the country. Thus an equilibrium is maintained far too absolute to admit of any such disturbance as has apparently been effected in England. The facts being duly regarded, it will be observed that the country districts belonging to the towns of England—belonging in the sense of necessary mutual dependence—are not only in England, but are spread over a large portion of the habitable globe. They are connected with us by our foreign commerce. For instance, many millions of acres of land within the torrid zone are cultivated with as perfect a relation to, and reliance on, the people of Manchester, as the consumers of the resulting produce, as are the few thousands of acres immediately around that town, and which within sight of its chimneys, and in contention with their smoke, grow wheat and oats, hay, potatoes, and milk, for the same consumers. Our manufacturing towns, and our great ports, may already be said to belong to half the human race.* To serve purposes which, through the connecting links of commerce, have become at once ours, and those of hundreds of millions of persons, ruled by numerous governments, and speaking many languages, our people have, for the last fifty years, been concentrating their habitations, and forming towns. This process is going on more rapidly now than at any past time. Nearly all the national energy is devoted, directly or indirectly, to its promotion. And as far as can yet be foreseen, it is likely to go on during the next fifty years much more rapidly than in the past. Our present purpose is to mark its rate of progress, and something of its methods; and this with a view to knowing ultimately something more of its effects, and thence of its probable action on the destiny of the English people, and especially on that of our own district.

Already some of its more immediate effects are visible enough. The greater efficiency of labour attained by bringing large numbers of men to act continuously together, and in concert, has long been obvious; and it is now practically illustrated in our towns to an enormous extent, and in a great variety of ways. But it is hardly less obvious that this increase of

* "Commerce brings the parties engaged in it into connection and contact with almost the whole known world. Liverpool is not the Liverpool of Lancashire only, or of Cheshire only, or of England only—Liverpool is the Liverpool of India, of China, of Africa, of North and South America, of Australia—the Liverpool of the whole habitable globe."—*Speech of Mr. Hope Scott on the Mersey Conservancy Bill, 24th June*, 1857.

power is bought at a price—that privation of light and air, for instance, has induced new and fatal diseases. It is now some years since the Registrar-General announced that the average duration of life among the population of the towns of England was about seventeen years less than among the population of the country. And with shortened life has come a lowered physical condition. Comparatively few of the inhabitants of our large towns are now found to possess the physical requisites looked for in those who enlist into the army. Intellectually, the results are similar. It is impossible to doubt, much less to deny, the good effects of a town life in promoting the education of most of the faculties. But it is doubtful whether it promotes the healthy action of these faculties, or gives to them a better direction. Morally, there seems to be a similar counterpoise. The action of public opinion, and of an efficient police, being allowed for, we find life and property in our large towns is tolerably secure. There is undoubtedly much vice; but there is also much virtue. And excepting that the tendency of a town life, in its almost exclusive devotion to money getting, results in an increased and sometimes exclusive action of the merely selfish propensities, it may be doubted whether the popular notion of the comparative viciousness of a town population is not a mistake. Here, however, we are on ground proper to ulterior enquiries, and not within the scope of the present paper.

In the five districts of the *Northern* region there were, in 1801, a population, in round numbers, of 79,000; and in 1851, a population of 122,000 persons; shewing, as I have said, an average increase of fifty-five per cent. In this region there were in 1801 only three towns—Ulverstone, Lancaster, and Kirkham. Clitheroe was then a considerable village, and Blackpool a small one; but Fleetwood had no existence. All the six now rank as towns, under the rule before stated, and in 1851 had an aggregate population of 37,000.*

In 1801 the whole town population of this region was about 15,500, or

* It has been found impossible, in many instances, to ascertain the actual area and population of the towns of 1801. The table (see Appendix) in which these results are stated has, therefore, been so framed as to exhibit only the (known or estimated) areas of the towns of 1851, with the population (known or estimated) of the same areas in 1801. If minute accuracy were aimed at in the text, this method would be objectionable; but as round numbers only are used, and approximate proportions only are indicated, it is, when marked, of little consequence.

about two parts in eleven of the whole. In 1851 it formed about three parts in ten of the whole. While the entire population had increased by 55 per cent., the towns had increased 140 cent.

In the eighteen districts of the *Eastern* (or Manchester) region, in 1801, there was a population of 512,000, and in 1851 of 1,556,000, an increase of 203 per cent. Here there were, in 1851, no fewer than thirty towns, with an aggregate population of very nearly one million, to say nothing of numerous villages so formed and inhabited as to share nearly all the ordinary characteristics of a town. Of the thirty towns of 1851, only twenty-four could be considered towns in 1801; and several of those might rather be set down as large villages. The six towns undoubtedly new are Bacup, Rawtenstall, Over-Darwen, Leigh, Horwich, and Hyde.

In 1801 the town population of this eastern region formed nearly half of the whole (231 parts out of 512). In 1851 it formed nearly two-thirds of the whole (999 parts out of 1556). In the fifty years the general population had increased by 203, and the town population by 325 per cent.

In the five districts of the *Western* (or Liverpool) region, the whole population increased from 138,000 to 563,000, or 307 per cent. Here there was in 1801 only one large town (Liverpool), and three small ones (Ormskirk, St. Helens, and Prescot.) To these, in 1851, had been added Southport. Birkenhead might also be classed as a new town, but I have preferred treating it, as I think it may more accurately be deemed, as a southern section of Liverpool. The towns of 1801 had an aggregate population of 93,700, and those of 1851 of 474,600, an increase of more than 400 per cent. And in 1851 the town population formed more than two-thirds of the whole (93 parts out of 138).

In the seven districts of the *Southern* (or Cheshire) region, the whole population increased from 143,000 to 249,000, an increase of only seventy-five per cent. But in 1801 there were here only five towns, and in 1851 this number had risen to eleven. Here, then, we see a very moderate increase of the general population accompanied by a rapid increase in the mere number of towns. The new towns are Runcorn, Frodsham, Altrincham, Knutsford, Sandbach, and Crewe. The town population increased more rapidly than the total; yet not with any remarkable degree of rapidity—being only from 44,000 to 99,000, or 125 per cent.

Hitherto we have compared only the censuses of 1801 and 1851. To introduce the other four censuses, and thence to mark the rates of increase in the towns and in the country districts, in each period of ten years—though it would undoubtedly throw much additional light on the probable future increase in particular localities, as well as on the causes and character of the increase already observed—would expand too much this, the first, section of the inquiry. It will therefore fall into the second. And in the third and concluding section we hope to deal with the sources of the increased population, and with its principal occupations.

APPENDIX.

TABLE I.

Registration District.	Area excl. Water.	Population.		Alteration.		Per Cent.	
	Acres.	1801.	1851.	Increase.	Dec.	+	—
Ulverstone	135,043	17,887	30,556	12,669		71	
Lancaster	138,746	24,942	34,660	9,718		39	
Garstang	61,192	9,647	12,695	3,048		32	
Fylde	54,587	11,327	22,002	10,675		94	
Clitheroe *	114,697	15,143	22,478	7,335		48	
Northern Region	504,265	78,946	122,391	43,445		55	
Burnley	54,126	24,419	63,868	39,449		162	
Haslingden	26,681	17,265	50,424	33,159		192	
Blackburn	43,569	33,173	90,738	57,565		174	
Preston	66,340	29,899	96,545	66,646		223	
Chorley	52,213	21,449	37,701	16,252		76	
Wigan	47,018	34,565	77,539	42,974		124	
Leigh	23,610	17,557	32,734	15,177		86	
Bolton	43,896	40,763	114,712	73,949		181	
Bury	32,990	31,852	88,815	56,963		179	
Rochdale	35,340	26,577	72,515	45,938		173	
Oldham	16,872	26,646	86,788	60,142		226	
Manchester	12,628	81,299	228,433	147,134		181	
Salford	4,830	18,525	87,523	68,998		372	
Barton-upon-Irwell	23,279	15,173	31,585	16,412		108	
Chorlton	11,549	9,342	123,841	114,499		1226	
Ashton-under-Lyne	38,657	27,371	119,199	91,828		335	
Stockport	30,709	32,772	90,208	57,436		175	
Macclesfield	81,561	24,215	63,327	39,112		162	
Eastern Region	645,868	512,862	1,556,495	1,043,633		203	
Ormskirk	87,278	18,479	38,307	19,828		107	
Prescot	51,154	20,703	56,074	35,371		171	
West Derby	37,752	11,994	153,279	141,285		1178	
Liverpool	1,560	77,653	258,236	180,583		233	
Wirrall	54,155	9,410	57,157	47,747		507	
Western Region	231,899	138,239	563,053	424,814		307	
Warrington	29,794	19,602	36,164	16,562		85	
Runcorn	43,636	11,408	25,797	14,389		126	
Altrincham	73,665	21,684	34,043	12,359		57	
Congleton	52,889	14,803	30,512	15,709		106	
Northwich	65,445	17,252	31,202	13,950		81	
Nantwich	121,051	24,163	37,986	13,823		57	
Great Boughton	105,718	33,704	53,294	19,590		58	
Southern Region	492,198	142,616	248,998	106,382		75	
Grand Total	1,874,230	872,663	2,490,937	1,618,274		185	

* Including Tosside, in Settle district, Yorkshire.

TABLE II.

TOWNS AS THEY STOOD IN 1851, WITH THE ESTIMATED OR KNOWN POPULATION OF THE SAME AREAS IN 1801. IN ORDER OF POSITION.

Towns.	Area.	Population.		Increase.		Density, 1851.
	Acres.	1801.	1851.	No.	℘ Cent.	℘ 100 acres.
Ulverstone	450	2737	6433	3696	135	1429
Lancaster	870	10135	15982	5847	58	1837
Fleetwood	250	—	3121	3121	New	1248
Blackpool	180	198	2180	1982	1001	1211
Kirkham	280	1543	2777	1234	80	992
Clitheroe	475	838	6604	5766	688	1390
Northern Region	2505	15451	37097	21646	140	1481
Colne	475	2476	6644	4168	168	1399
Burnley	1225	2224	20828	18604	837	1700
Accrington	500	1946	7481	5535	284	1496
Bacup	475	1246	6981	5735	460	1470
Rawtenstall	500	650	4844	4194	645	969
Haslingden	430	2790	6154	3364	121	1431
Over Darwen	475	787	7020	6233	792	1478
Blackburn	2300	11330	45536	34206	302	1980
Preston	2753	12174	69542	57368	471	2526
Chorley	600	2891	8907	6016	208	1485
Wigan	1961	10901	33761	22860	210	1722
Hindley	385	1532	5285	3753	245	1373
Leigh	385	700	5206	4506	644	1352
Atherton	250	2109	2780	671	32	1112
Tyldesley	280	1809	3608	1799	99	1289
Horwich	180	315	2104	1789	568	1169
Bolton	1820	17429	60711	43282	248	3336
Radcliffe	363	1847	5002	3155	171	1378
Bury	1470	6852	27762	20910	305	1889
Heywood	750	2800	12194	9394	336	1626
Rochdale	1130	8500	29195	20695	243	2584
Middleton	400	1765	5740	3975	225	1435
Eccles	325	2000	4108	2108	105	1264
Manchester	9785	94409	404808	310399	329	4137
Oldham	2317	9024	46820	37796	419	2021
Ashton-under-Lyne	1525	4837	40723	35886	742	2670
Staleybridge	1240	1500	23877	22377	1492	1926
Hyde	650	863	10051	9188	1065	1546
Stockport	2155	18880	53610	34730	184	2488
Macclesfield	1720	9293	38648	29355	316	2247
Eastern Region	38824	235879	999930	764051	324	2576
Southport	350	100	4765	4665	466	1362
Ormskirk	385	2214	5548	3334	151	1441
St. Helens	900	3167	14866	11699	369	1652
Prescot	500	3665	7393	3728	102	1479
Liverpool, (north)	11495	84706	399466	314760	372	2708
" (south)*	4828	1212	42639	41427	3418	
Western Region	18458	95064	474677	379613	399	2572
Warrington	1290	10621	22392	11771	111	1736
Runcorn	550	1179	8049	6870	583	1463
Frodsham	180	1170	2099	929	79	1166
Northwich	957	3974	8338	4364	110	871
Altrincham	357	1602	4298	2696	168	1204
Knutsford	250	1802	3127	1325	74	1251
Congleton	650	3461	10020	6559	190	1541
Sandbach	225	1194	2752	1558	130	1223
Crewe	350	81	4491	4410	544	1283
Nantwich	400	3353	5426	2073	62	1356
Chester	2008	15474	27916	12442	80	1390
Southern Region	7217	43911	98908	54997	125	1370
Total	67004	390905	1610612	1220307	313	2404

* Birkenhead.

TABLE III.

Area and Population of Towns in 1801 and 1851, with the Increase (1801-51) in Population, and Rate per cent. of Increase.

Towns.	1801.		1851.		Increase in Popn.	
	Area, Acres.	Populatn.	Area, Acres.	Populatn.	Number.	⅌ Cent.
Ulverstone	250	2700	450	6433	3733	138
Lancaster	650	10000	870	15982	5982	60
Fleetwood	—	—	250	3121	—	—
Blackpool	—	—	180	2180	—	—
Kirkham	—	—	280	2777	—	—
Clitheroe	—	—	475	6604	—	—
Northern Region	900	12700	2505	37097		
Colne	200	2400	475	6644	4244	177
Burnley	—	—	1225	20828	—	—
Accrington	—	—	500	7481	—	—
Bacup	—	—	475	6981	—	—
Rawtenstall	—	—	500	4844	—	—
Haslingden	250	2700	430	6154	3454	128
Over Darwen	—	—	475	7020	—	—
Blackburn	700	10500	2300	45536	35036	334
Preston	750	11400	2753	69542	58142	510
Chorley	250	2700	600	8907	6207	230
Wigan	700	10400	1961	33761	23361	225
Hindley	—	—	385	5285	—	—
Leigh	—	—	385	5206	—	—
Atherton	180	2070	250	2780	710	34
Tyldesley	—	—	280	3608	—	—
Horwich	—	—	180	2104	—	—
Bolton	900	16425	1820	60711	44286	270
Radcliffe	—	—	363	5002	—	—
Bury	475	6250	1470	27762	21512	344
Heywood	250	2450	750	12194	9744	398
Rochdale	550	8200	1130	29195	20995	256
Middleton	—	—	409	5740	—	—
Eccles	—	—	325	4108	—	—
Manchester	2600	87500	9785	404808	317308	363
Oldham	600	7000	2317	46820	39820	569
Ashton-under-Lyne	350	3500	1525	40723	37223	1064
Staleybridge	—	—	1240	23877	—	—
Hyde	—	—	650	10051	—	—
Stockport	1000	18350	2155	53610	35260	192
Macclesfield	600	9000	1720	38648	29648	329
Eastern Region	10355	200845	38824	999930		
Southport	—	—	350	4765	—	—
Ormskirk	—	—	385	5548	—	—
St. Helens	250	2900	900	14866	11966	413
Prescot	280	3575	500	7393	3818	107
Liverpool, North	2500	81000	11495	399466	318466	446
" South	—	—	4828	42639	42639	
Western Region	3030	87475	18458	474677		
Warrington	650	10400	1290	22392	11992	115
Runcorn	—	—	550	8049	—	—
Frodsham	—	—	180	2099	—	—
Northwich	600	3850	957	8338	4488	117
Altrincham	—	—	357	4298	—	—
Knutsford	—	—	250	3127	—	—
Congleton	280	3400	650	10020	6620	195
Sandbach	—	—	225	2752	—	—
Crewe	—	—	350	4491	—	—
Nantwich	250	3300	400	5426	2126	64
Chester	1500	15350	2008	27916	12566	82
Southern Region	3280	36300	7217	98908		
Total	17565	337320	67004	1610612		

TABLE IV.

COMPARATIVE PROGRESS OF LARGE TOWNS AND THE REMAINING PART OF THE COUNTRY, IN DECENNIAL PERIODS.

Towns.	Population.					
	1801.	1811.	1821.	1831.	1841.	1851.
Liverpool, North	85786	108907	145960	221576	302929	396601
„ South	1462	1768	2570	7087	18913	42639
Manchester	98020	119633	166300	244297	320654	416350
Preston	12174	17360	24859	33871	50687	69485
Bolton	18574	25551	32973	43396	52229	63217
Stockport	22036	28287	35571	46868	56061	59163
Oldham	12024	16690	21662	32381	42595	52820
Blackburn	11980	15063	21940	27091	36629	46536
Ashton-under-Lyne	15632	19052	25967	33597	46304	56521
Macclesfield	11064	15129	21819	32068	34723	41189
Wigan	11951	15125	19078	22677	27917	35611
Rochdale	17780	22036	27798	35764	44159	54979
Chester	15718	16800	20850	22244	23860	27648
Bury	9152	11302	13480	19140	25912	31966
Staleybridge	2792	4157	6705	17121	26299	30997
Warrington	11321	12682	14822	18184	21342	23342
Burnley	5224	7207	10990	13368	18966	27042
Lancaster	10308	10501	11427	13964	15754	16149
St. Helens	5797	7283	8274	11026	16475	22754
Heywood	4283	5148	6552	10429	14856	16048
Hyde	1063	1806	3355	7144	10170	11569
Congleton	3861	4616	6405	9352	9222	10520
Totals	388002	486123	649367	922645	1216886	1554136
Balance	484661	577043	681400	754873	847995	927831
Lancashire and Cheshire	872663	1063166	1330767	1677518	2064881	2481967

TABLE V.

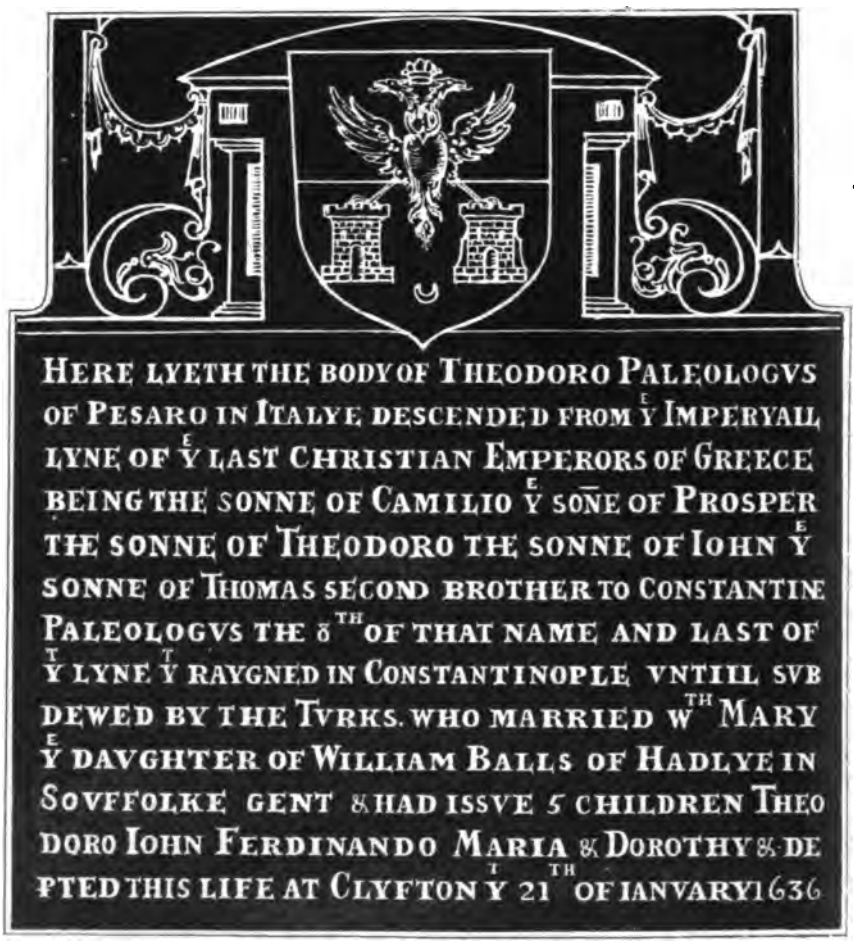
Registration District.	Town Part.			Country Part.									
	Area.	Population.		Area.	Population.		Alteration		% Cent.		Density per sq. mile.		
	Acres.	1801	1851	Acres.	1801	1851	Inc.	Dec	+	—	1801	1851	Inc.
Ulverstone	450	2737	6433	134593	15150	24123	8973		59		72	115	43
Lancaster	870	10135	159[illegible]	137876	14807	18678	3871		26		69	87	18
Garstang.....				61192	9647	12695	3048		32		101	133	32
Fylde	710	1741	8078	53877	9586	13924	4338		45		114	165	51
Clitheroe*	475	838	6604	114222	14305	15874	1569		11		80	89	9
Northern Region ..	2505	15451	37097	501760	63495	85294	21799		34		81	109	28
Burnley	1700	4700	27472	52426	19719	36396	16677		85		241	444	203
Haslingden.....	1905	6632	25160	24776	10633	24964	14331		135		275	645	370
Blackburn	2775	12117	52556	40794	21056	38182	17126		81		330	599	269
Preston	2753	12174	69542	63567	17725	27003	9278		52		178	272	94
Chorley	600	2891	8907	51613	18558	28794	10236		55		230	357	127
Wigan	2346	19433	39046	44672	22132	38493	16361		74		317	551	234
Leigh	915	4618	11594	22695	12939	21140	8201		63		365	596	231
Bolton	2000	17744	62815	41896	23019	51897	28878		125		352	793	441
Bury.....	2583	11499	44958	30407	20353	43857	23504		115		428	923	495
Rochdale	1130	8500	29195	34210	18077	43320	25343		140		338	810	472
Oldham	2717	10789	52560	14155	15857	34228	18371		116		717	1548	831
Manchester	4005	72331	210796	8623	8968	17637	8669		97		666	1309	643
Salford.....	2540	16638	80773	2290	1587	6750	5163		325		444	1886	1442
Barton-upon-Irwell....	675	2300	6608	22604	12873	24977	12104		94		364	707	343
Chorlton	2890	4840	110739	8659	4502	13102	8600		191		333	968	635
Ashton-under-lyne	2765	6337	64600	35892	21034	54599	33565		160		375	974	599
Stockport	2805	19743	63661	27904	13029	26547	13518		104		299	609	310
Macclesfield	1720	9293	38648	79841	14922	24679	9757		65		120	198	78
Eastern Region	38824	235879	999930	607044	276963	556565	279582		101		292	587	295
Ormskirk	735	2314	10313	86543	16165	27994	11829		73		120	207	87
Prescot	1400	6832	22259	49754	13871	33815	19944		144		178	435	257
West Derby	9935	7053	141230	27817	4941	12049	7108		144		114	277	163
Liverpool	1560	77653	258236										
Wirrall.....	4828	1212	42639	49327	8198	14518	6320		77		106	188	82
Western Region....	18458	95064	474677	213441	43175	88376	45201		105		129	265	136
Warrington.....	1290	10621	22392	28504	8981	13772	4791		53		202	309	107
Runcorn	730	2349	10148	42906	9059	15649	6590		73		135	233	98
Altrincham	607	3404	7425	73056	18280	26618	8338		46		160	233	73
Congleton	875	4655	12772	52014	10148	17740	7592		75		125	218	93
Northwich	957	3974	8338	64488	13278	22864	9586		72		132	227	95
Nantwich	750	3434	9217	120301	20729	28069	7340		35		110	149	39
Great Boughton	2008	15474	27916	103710	18230	25378	7148		39		112	157	45
Southern Region ..	7217	43911	98908	484981	98705	150090	51385		52		130	198	68
Grand Total	67004	390305	1610612	1807226	482358	880325	397967		83		171	312	141
Area covered by Town since 1801	49439	52985		49439	52985								
Corrected figures for 1801	17565	337320		1856665	535343						185	312	127

* Including Toseside, in Settle District, Yorkshire.

COPY OF RUBBING

TAKEN FROM THE

TOMB OF THEODORO PALEOLOGUS, LANDULPH CHURCH, CORNWALL.



TRANSACTIONS OF HISTORIC SOCIETY,
LIVERPOOL, 1857.

A VISIT TO THE TOMB OF THEODORO PALEOLOGUS.

By John Thomas Towson, Esq.

(Read 21st May, 1857.)

During a recent visit to the west of England it occurred to me that it might be interesting to this Society to obtain such information connected with the latter part of the history of the family of the Paleologi, as the records of the parish of Landulph afford, and also to procure a rubbing from a monumental brass on the wall of the Church over the tomb of Theodoro Paleologus. Having introduced myself as a member of this Society, I received every courtesy and attention from the Rector, the Rev. W. Seymour. It is the result of this visit I have now the honour of laying before this Society.

Landulph is a parish in Cornwall, situated on the banks of the Tamar, two miles beyond Saltash. Its Church is a very ancient one, and bears many records, extending over at least three centuries, of the connexion that existed between the principal families of this parish and the affairs of those allied to the house of Paleologus. Although the Church is said to have been rebuilt at or about the commencement of the fourteenth century, by Nicholas D'Awney or Dawney, one of the Crusaders who returned after the fall of Ptolemais, still an inspection of the building leads us to believe that it was rather enlarged than rebuilt at that period. The arch of entrance, and the "bustos" at each side of the ceiling between the chancel and nave, appear to be Saxon. At the period named, there can be no doubt that the lord of the manor of Landulph was much interested in Byzantine affairs. About the middle of the fourteenth century Sir Edward Courtenay inherited the manor, by marriage with Emmeline, daughter and heiress to Sir John Dawney. Between the years 1477 and 1486, Peter Courtenay, Bishop of Exeter, was lord of the manor, except during the time he was attainted in 1484 and part of 1485. The Bishop had joined Sir Edward

Courtenay (afterwards Earl of Devon), in the conspiracy with Richmond against Richard III., which having failed, he fled with the Earl, but returning with him to the battle of Bosworth, in which he was personally engaged, the attainder was removed, and the manor of Landulph restored by Henry VII.

The Archæologia of Landulph settles a disputed point on which Cleveland differs from most other historians in asserting that Peter, Bishop of Exeter, was son of Sir Philip Courtenay, of Powderham. Cleveland is decidedly wrong. The Courtenays of Powderham had no family connexion with the D'Awneys, by which they could inherit Landulph. The Bishop was brother of the Earl of Devon, as most historians assert, being a descendant from Sir Edward Courtenay. This is proved by his arms, and those of the Earl of Devon, impaling those of the D'Awney family, from whom the manor of Landulph was inherited. After the restoration of the manor of Landulph to Peter Courtenay in 1485, it remained with that family till 1539, when in consequence of the attainder of the Marquis of Exeter, it was lost; and although Queen Mary removed the attainder, and restored Edward Courtenay to the Earldom of Devon, and the Manor of Landulph is specially mentioned in the Act of Restoration, it has ever since its confiscation remained *de facto* a portion of the Duchy of Cornwall.

I need scarcely here detail how intimately the family of the Courtenays were connected, during a considerable portion of this period, with Byzantine affairs, but merely remark that on this account, in chapter 61 of the "Decline and Fall of the Roman Empire," Gibbon has thought it necessary to introduce a "digression on the family of Courtenay," and that three members of that family were Emperors of Constantinople during the thirteenth century.

The principal seats in Landulph Church were erected by Peter Courtenay, and a large number of those curious carvings on the panels, common at that period, still remain. The most interesting of these are the armorial bearings of the principal families who have resided in this parish. In the nave there are the arms of the see of Exeter, a sword in pale surmounted by two keys in saltire; arms of Courtenay, three torteaux with label of three points; in the chancel the arms of Courtenay, surmounted by a mitre and the arms of the Bishopric of Exeter. On the Clifton seats are the arms of Lower, Moyle, Trethirf, Flamank, Trevarthin, Valetort, Densil,

Bodragan, Prideaux, Carminow, Reskymer, Arundell, Killigrew, Langdon, Trevenor, Upton, Trefry, Treveerbyn and Talbot. There is in like manner the arms of a knight who had been engaged in the Crusades, a chevron between three Saracen heads affrontes.

At the commencement of the seventeenth century we find that Sir Nicholas Lower was the principal inhabitant of Landulph, as occupier of Clifton, the mansion of the Arundells. It appears that he was collaterally connected with the family of Paleologus, his brother Sir Francis Lower, having married a lady of Grecian origin, a native of Constantinople, and in some way connected with the family of Paleologus. Her name was Antonetao Mulier Turcom, daughter of Ocker, the son of Sizzeksen. It is supposed, however, that Sir Nicholas was more directly connected with the Paleologi, since Theodoro Paleologus, with his family of five children, became guests of Sir Nicholas Lower, at Clifton, between the years 1620 and 1630, and continued so till his death.

Dame, the wife of Sir Nicholas Lower, died in 1638, and Sir Nicholas seventeen years after the death of his wife. Their monumental inscriptions read as follows :—

HEERE LYETH BVRIED THE BODY OF DAME ELIZABETH LOWER LATE WIFE VNTO SR NICHOLAS LOWER OF CLIFTON KT DAVGHTER VNTO SR HENRY KILLIGREW OF LONDON KT ANTIENTLY DESCENDED FROM YE HOVSE OF ARWENNICH IN CORNWALL AND FROM YE YOVNGEST OF THE LEARNED DAVGHTERS OF SR ANTHONY COOKE KT A MAIDE OF HONOVR TO QVEENE ELIZABETH WHO FOR TREW VIRTVE PIETY & LEARNING CAME NOTHING SHORT (THAT I MAY MODESTLY SPEAKE) OF ANY HER ANCESTORS AND FOR HER SINGVLAR COVRTESY TO ALL & AMIABLE SVBJECTION TO HER HVSBAND (A VERTVE RARE & HIGH) I THINKE CAN HARDLY BE MATCHD WHO DESERVES A FAR AMPLER CHARACTER THAN CAN BE CONTAIND IN SO NARROW A ROOME, SHE DYED AT CLIFTON IN CORNWALL THE SIXT DAY OF JVNE IN THE YEARE OF OVR LORD 1638 AND EXPECTS HEERE A GLORIVS RESVRRECTION.

This mural brass is surmounted by the arms of Killigrew, impaled by that of Lower, chevron between three roses, crest unicorn's head, the same as that on the black marble tomb in which Sir Nicholas and his lady were buried.

The mural inscription of Sir Nicholas Lower is as follows :—

HERE LYETH BVRIED YE BODY OF SR NICHOLAS LOWER OF CLIFTON KNIGHT, DESCENDED OF THE HOVSE OF ST. WINOWE) THE SONNE OF THOMAS LOWER AND JANE HIS WIFE ONE OF THE COEHEYRES OF RESKYMER WHO HAD ISSVE SIX SONNES VIZ SR WILLIAM LOWER KNIGHT DESCEASED IN CARMARTHENSHIRE, JOHN LOWER, THE (SAID SR NICHOLAS LOWER) SIR FRANCIS LOWER KNIGHT THOMAS LOWER DESCEASED IN LONDON AND ALEXANDER

LOWER) (HE MARRIED WITH ELIZABETH ONE OF THE DAVGHTERS OF SR HENRY KILLEGREVE OF LONDON KNGT DYED WITH OVT ISSVE SVRRENDRING HIS SOVLE TO HIS REDEEMER AT CLIFTON YE 17TH OF MAYE AO DNI 1655.

The arms are the same, except that the crest and mullet of difference are omitted.

Theodoro Paleologus died in 1636. The monumental brass over his tomb is one of considerable interest, and I have the honour of presenting to this Society a rubbing, a copy of which is annexed. The inscription is surmounted by the imperial arms proper of the empire of Greece. An eagle displayed with two heads, legs resting on the houses of Rome and Constantinople, an imperial crown over, and the crescent of difference for second son between the gates. Thomas was the fifth son of Manuel but the second to Constantine, to whom the arms proper as Emperor belonged.

The family of Theodoro continued to reside at Clifton, after the death of Sir Nicholas, and Maria Paleologus remained a resident there till her death, which occurred in 1674. Some believe that the family of Lady Lower, that of Killigrew, was connected with that of Paleologus, and support this hypothesis by reference to the amorial bearings of that family. It is an eagle displayed with two heads within border bezanty. The eagle on the brasses is the same as that of Paleologus, the gates and imperial crown being omitted, and the border bezanty added. The border bezanty proves that the baronet who first bore this coat was a Crusader, and this strengthens the probability that such a connexion might have existed. The name Killigrew, the armorial bearing, and the baronetcy, were conferred at the same time. The last became extinct about the middle of the seventeenth century, but some collateral branches of that family retain both the name and arms to the present day.

Had the result of our investigations been consistent with the testimony of Byzantine historians, we should have little further to add than to trace the five children of Theodoro; having come to this conclusion that Theodoro was the eldest son of Camilio, the eldest son of Prosper, the eldest son of Theodoro, the eldest son of John, the eldest son of Thomas, the next brother to Constantine. But Gibbon designates Andrew the eldest son of Thomas, and Manuel the second son. He refers to these two sons as though they were his only children. In chapter 68 he says, "It is not

easy to pronounce whether the servitude of Demetrius, or the exile of his brother Thomas, be the most inglorious. On the conquest of the Morea the Despot (Thomas) escaped to Corfu, and from thence to Italy, with some naked adherents: his name, his sufferings, and the head of the apostle St. Andrew entitled him to the hospitality of the Vatican; and his misery was prolonged by a pension of six thousand ducats from the Pope and Cardinals. His two sons Andrew and Manuel were educated in Italy, but the eldest, contemptible to his enemies and burthensome to his friends, was degraded by the baseness of his life and marriage. A title was his sole inheritance, and that inheritance he successively sold to the kings of France and Arragon." And again, in the same chapter, "Manuel Paleologus, the second son, was tempted to revisit his native country. His visit might be grateful, and could not be dangerous to the Porte: he was maintained at Constantinople in safety and ease; and an honourable train of Christians and Moslems attended him to his grave. If there be animals of so generous a nature that they refuse to propagate in a domestic state, the *last of the imperial race* must be ascribed to an inferior kind: he accepted from the Sultan's liberality two beautiful females; and his surviving son was lost in the habit and religion of a Turkish slave." Thus Gibbon ignores altogether the existence of John, the son of Thomas.

This at first appears a most serious difficulty to surmount, but we believe that the Archæologia of Landulph alone is sufficient to prove that this omission must have been an error on the part of Gibbon. Some years since the tomb in which Theodoro is said to have been buried, was accidentally opened, and a body was there found in a single oak coffin, in so perfect a state as to determine that he was in stature far beyond the common height, that his features were oval, and nose very aquiline, all of which are family traits. He had a very white beard, low down on his breast.

There is therefore no doubt that some one, believed to have been Theodoro Paleologus, was buried there, and the registers of this and other neighbouring parishes, as we shall hereafter find, establish the fact that a person representing himself to have been such, had lived and died in Landulph. And it is most improbable that an impostor could have succeeded in deceiving the residents of this parish. We must not, in this investigation, regard Landulph as an obscure parish, in a remote part of England, but as the residence at times of the Talbots, the Killigrews, the Valetorts, and several others who owed their family prestige to their ancestors having been Crusaders, and there-

fore well-versed in Byzantine affairs. This is shown by the carvings on the doors of the principal seats in the Church, of torteaux, crosses, lions' heads, bezants, Saracens' heads, and other charges which were assumed by Crusaders on their return, or by their families, in commemoration of the expeditions in which they had been engaged. But beyond all others the Courtenays were the last persons in the kingdom who could be imposed on in such a matter. We have also the assurance, on the monument of Lady Lower, that she was daughter of the youngest of the learned daughters of Sir Anthony Cooke, and that for learning she came nothing short of any of her ancestors. We know that one of the accomplishments which distinguished the daughters of Sir Anthony Cooke as learned, was their extraordinary proficiency in the knowledge of the Greek language, both ancient and modern, and this latter would no doubt include a full knowledge of all matters connected with the Byzantine Empire. Lady Lower was also a maid of honor to Queen Elizabeth, at the time when the Czar, Ivan the Terrible, grandson of Zoe Paleologus, was one of the suitors of "Her most gracious and drede Majestie," and therefore she possessed all the knowledge of the family of Paleologus which a connexion with court at that period could confer. Nothing appears therefore more improbable than that in this matter Lady Lower could be so deceived as to receive such an impostor as a guest. On the contrary, we can understand the motives which might have induced the occupants of Clifton to invite the Paleologi to become residents at their mansion.

But we do not depend alone on the Archæologia of Landulph. The existence of this direct branch of the Paleologus family, through Thomas, brother of Constantine, was better known in Italy and Greece, than in this country. During the War of Independence in Greece a deputation was appointed by the provisional government to inquire whether any of the family of Paleologus existed. This deputation proceeded to Italy and other places where the Paleologi had become refugees, and amongst other places to Landulph, to carry out the object of their appointment. At that time the Rev. Frances Vyvyan Jago Arundell was rector of Landulph. That gentleman having given much attention to all matters connected with archæology, rendered great assistance in this investigation, and also gained much valuable information respecting the earlier history of the Paleologus family. He ascertained that Thomas was married in 1430, to the daughter of a Genoese nobleman, Catherine, the mother of John, Helena, and Zoe.

Andrew was born on the 17th of January, 1453. This was twenty-three years after the marriage to Catherine. On the 11th January, 1455, Manuel was born, and five years after this (1460) his sister Helena was married to Lazarus, despot of Servia, whose arms now impale those of the Empire of Constantinople. Subsequently (1475) Zoe, another daughter of Thomas, was married to Ivan III., grand duke of Muscovy, and it is through this marriage that a claim is set up in favour of the present Czars of Russia being descendants from the Emperors of Constantinople. There is no doubt but that it was through the marriage of Ivan III. to Zoe Paleologus that the Czars of Russia obtained the two-headed eagle. She brought as her dowry to the Grand Prince the arms of the Grecian Empire, the cognisance of sovereigns of Russia having previously been the figure of St. George killing the dragon. All subsequent Czars have borne the two-headed eagle of Constantinople as arms of dominion, even where, as in the case of Boris Godonof, no claim could have been set up of being related in any manner to the descendants of Zoe Paleologus. Great discrepances however exist on this subject amongst Byzantine and Russian historians. Some represent the second consort of Ivan III. as being Sophia, daughter of Manuel II. But this cannot have been the case, since the second wife of Ivan gave birth to a prince at least 60 years after the death of Manuel, who had been several years a widower. The first consort of Ivan, who was the daughter of the Hospodar of Tver, was probably called Sophia, this being the name of a princess who was married to a Romanoff, through which marriage the present Czars are descendants from Ivan III. and may be thus regarded as representatives of the house of Rurik.

The founder of the family of Romanoff was a Prussian of obscure origin, who settled in Russia in 1350, but being distinguished by public virtue, brilliant achievements, and zeal for the welfare of his adopted country, he rose rapidly into eminence. For 250 years it was the policy of that family to contract alliances with every branch of the Russian nobility. To this policy they owe the imperial crown, and especially to an acknowledged relationship to the family of Rurik, but it is scarcely possible that this popularity arose from his connexion with an issue of the second marriage that had been so offensive to the boyards as to have given rise to a revolt against Ivan, which required the severest measures to suppress.

Taking into consideration the acknowledged difficulty which occurs in

tracing genealogy in Byzantine and Russian annals at this period,* we do not believe that any of the discrepancies to which we have alluded throw any doubt on our position, viz., that Thomas Paleologus had five children, John, Andrew, Manuel, Helena, and Zoe, and that Theodoro, the subject of this paper, was the direct descendant from John, the eldest son of Thomas. And Theodoro also, as shown by the monumental brass, left five children. It then remains for us to endeavour to trace, most probably, the last of the descendants of Theodoro Paleologus.

In the list of the army raised under Robert, Earl of Essex, we find the name of Theodoro Paleologus, as a lieutenant in the Lord Saint John's regiment. This was while Essex was in the west of England, and previously to his taking arms against the king, and we may presume from the fact, that the brothers of Theodoro bore arms as Cavaliers, that he left the army when Essex joined the parliamentary cause, for we find that he died a sailor on the 1st of August, 1693, whilst serving on board of the "Charles II.," commanded by Captain Charles Gibson, but his rank is not stated. He had acquired landed property, which he left to his wife Martha. He makes no mention of any issue in his will, and as it was customary at that period to do so, even when children were disinherited, it is presumed that he left no issue.

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* The discrepancies in Byzantine and Russian history have evidently been increased by the misconceptions of modern authors. Thus it is made to appear that two princesses of the house of Paleologus were married to Muscovite princes; Sophia, daughter of Manuel II., to Ivan III., and Zoe, daughter of Thomas, to John Basilides, or Basilius. But all these names belong to the same grand prince, or czar, Ivan III. (Basilovitz). By most historians Demetrius is represented as being the fifth son of Manuel II., and Thomas as the sixth. Although the weight of evidence appears rather in favour of this statement, we have given the preference to the contrary, because it agrees with the Archæologia of Landulph. The Russian history of this period contains also many discrepancies. Thus, by Kelly, the second marriage of Ivan III. is said to have taken place after the death of his first consort in 1485. The historians of the fifteenth century disagree to such an extent as to render it difficult to decide whether Ivan's marriage with Zoe took place before or after the death of his first consort. They are equally divided in assigning, as the period of the birth of Ivan III., the years 1438 or 1440. The existence of a regency between the death of Basil V. and the reign of Ivan IV. has caused the number of years of the reign of the last named sovereign to be variously stated. Haydn is, without doubt, wrong in representing the murdered Dmetri as the son of Feodore, who was only the elder by ten years. We also find that Boris Godonof at first pronounced Dmetri to be illegitimate, because he was the son of the last of Ivan's seven wives, such marriage being contrary to the canons of the Greek Church.

Soon after the death of their father, John and Ferdinando served under Major Lower, nephew of Sir Nicholas Lower, on the king's side. Ferdinando appears to have been a lieutenant, but the rank of John is unknown. They fought with the Major at the battle of Naseby. Major Lower gallantly fell, and it is supposed that John fell by his side. Ferdinando escaped to Barbadoes, his maternal grandfather, William Bales, of Hadlye, in Suffolk, having estates in that island. Here he resided thirty years at Clifton Hall, so named by him in remembrance of the hospitality he had received at the mansion of Clifton in Landulph. He was married here, and had one son, Theodorus. Ferdinando died in September, 1678, and was buried on the 3rd of October. He left one-half of his plantation to his wife, Rebecca Paleologus, for her life, with the remainder to his son, Theodorus Paleologus, except some trifling legacies, two of which he bequeathed to his sisters, Mary Paleologus and Dorothy Arundell. Theodorus died soon after, on which the whole of the landed property devolved on his mother. If, therefore, any descendants of this branch remain, it must be in the female line. Several respectable families in Barbadoes claim thus to be allied to the family of Paleologus. But it appears improbable that Ferdinando left a daughter, no mention being made of her in his will. It has also been stated, that the assumed alliance with the family of Paleologus was a family connexion with the issue of the widow of Ferdinando by a second marriage. During the year 1831 the lead coffin of Ferdinando Paleologus was discovered. There had been two Greek customs observed at the burial of Ferdinando. The coffin was laid in the contrary direction to that which is customary in the west, and the body was imbedded in quicklime. Although the skeleton alone remained it was evident that Ferdinando resembled his father, in being of extraordinary stature. The deputation from the provisional Greek government, to which we have before referred, corresponded with the authorities at Barbadoes, to ascertain whether any of the descendants of Ferdinando were living.

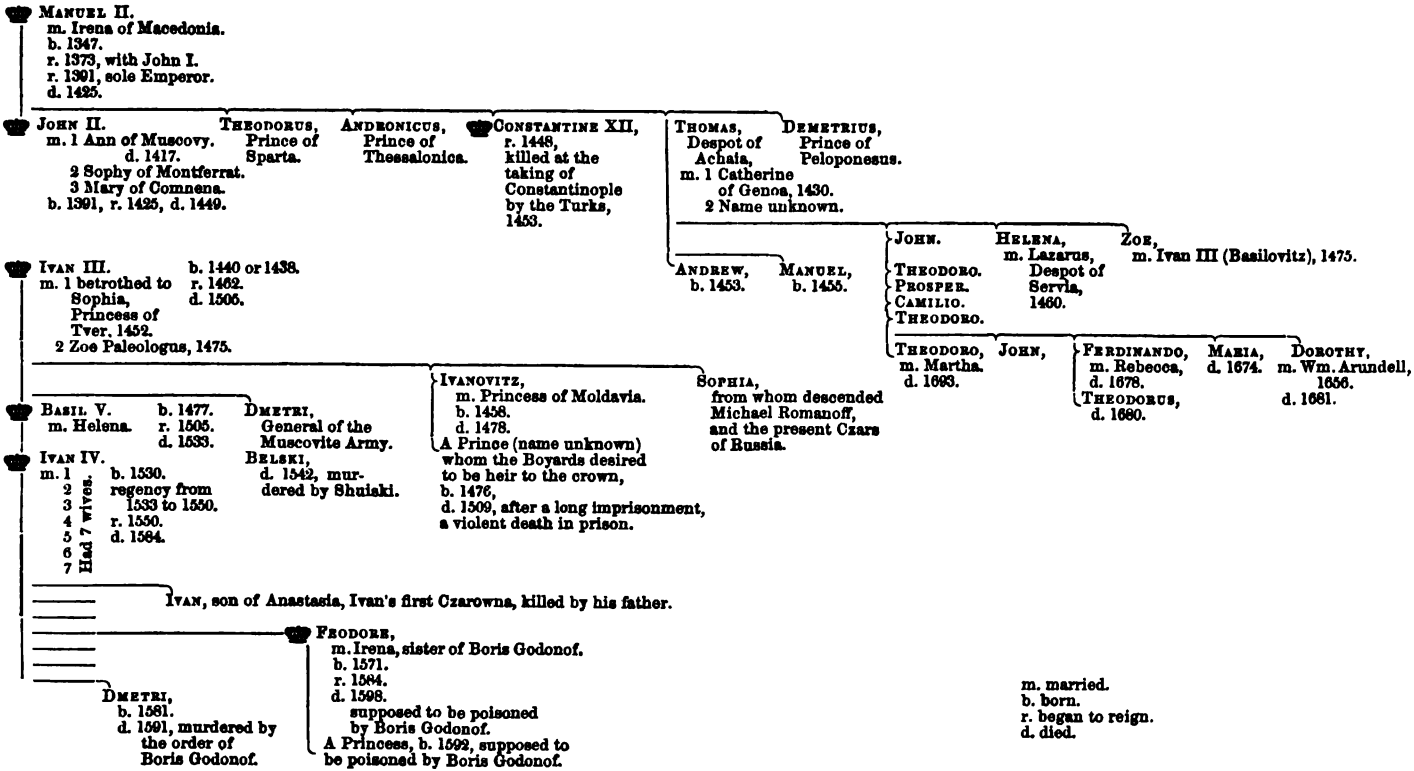
Maria Paleologus continued a resident in Landulph, during thirty-eight years after the death of her father, and died unmarried in the year 1674.

Dorothy was married in 1656, to William Arundell, of St. Mellion, a parish situate about four miles from Landulph. He was one of the grandsons of Alexander Arundell, of Clifton. At the time of this marriage Dorothy was still residing at Landulph, most probably at Clifton, her

marriage was therefore registered in both parishes. The entry in the St. Mellion registry is, "*Dorothea Paleologus de stirpe Imperatorum.*" Soon after their marriage they removed to St. Dominick, about five miles from Landulph; the register of this parish having been accidentally destroyed, there now exists no means of determining whether they had issue. Mr. Arundell has however observed that a Mary Arundell was married to Francis Lee, of Cargreen, and from the date considers it probable that she might have been the daughter of Mary Paleologus, and therefore that the imperial blood may still flow in the bargemen of Cargreen, bearing the name of Lee. It is however improbable that a lady, who at her marriage adopted the unusual method of blazoning her descent from a dynasty which had been extinct for 200 years, as *de stirpe Imperatorum*, should, at the baptism of her daughter, have failed to adopt the usual means of marking the family prestige, and have conferred on her no other Christian name than that of Mary. I do not myself consider that any of the present Arundells are descended from the Arundells of Clifton, because I find that the late Rector, Francis Vyvyan Jago Arundell, who possessed the last of the estates held by a proprietor of that name, took the name of Arundell by letters patent on coming into possession of this property, his paternal name being Jago; nor do I understand that he had even a collateral family connexion with anyone bearing that name. We believe, therefore, that there remains no descendant from Dorothy Paleologus.

I append a genealogical map of the descendants of Manuel II. and also one for the issue of the two marriages of Ivan III. That branch, however, which connects the houses of Rurik and Romanoff, on account of the imperfect data now attainable, is obviously defective. From the same cause there are also other details that claim a greater or less amount of credence. These have already been discussed in pages 217, 218 and 219, and in the foot note page 220.

[NOTE. The Greek Empire, or "Empire of Constantinople." existed for more than 1000 years, from the accession of Theodosius I. in 385, till the capture of Constantinople by the Turks in 1453. There were in all 72 Emperors; of whom the Paleologi furnished eight (including Alexis III.) They were the last of ten dynasties, (exclusive of the Frank Emperors,) being descended naturally from the Emperors Angeli, who again were descended naturally from the Emperors Comneni.]


Manuel II.
m. Irena of Macedonia.
b. 1347.
r. 1373, with John I.
r. 1391, sole Emperor.
d. 1425.
John II.
m. 1 Ann of Muscovy.
d. 1417.
2 Sophy of Montferrat.
3 Mary of Comnena.
b. 1391, r. 1425, d. 1449.
Theodorus, Prince of Sparta.
Andronicus, Prince of Thessalonica.
Constantine XII, r. 1448, killed at the taking of Constantinople by the Turks, 1453.
Thomas, Despot of Achaia,
m. 1 Catherine of Genoa, 1430.
2 Name unknown.
Demetrius, Prince of Peloponesus.
Andrew, b. 1453.
Manuel, b. 1455.
John.
Theodoro.
Prosper.
Camilio.
Theodoro.
Helena, m. Lazarus, Despot of Servia, 1460.
Zoe, m. Ivan III (Basilovitz), 1475.
Theodoro, m. Martha. d. 1693.
John,
Ferdinando, m. Rebecca, d. 1678.
Theodorus, d. 1680.
Maria, d. 1674.
Dorothy, m. Wm. Arundell, 1656. d. 1681.
Ivan III.
m. 1 betrothed to Sophia, Princess of Tver, 1452.
2 Zoe Paleologus, 1475.
b. 1440 or 1438.
r. 1462.
d. 1505.
Ivanovitz, m. Princess of Moldavia.
b. 1458.
d. 1478.
A Prince (name unknown) whom the Boyards desired to be heir to the crown,
b. 1476,
d. 1509, after a long imprisonment, a violent death in prison.
Sophia, from whom descended Michael Romanoff, and the present Czars of Russia.
Basil V.
m. Helena.
b. 1477.
r. 1505.
d. 1533.
Dmetri, General of the Muscovite Army.
Belski, d. 1542, murdered by Shuiski.
Ivan IV.
m. 1
2
3
4
5
6
7
Had 7 wives.
b. 1530.
regency from 1533 to 1550.
r. 1550.
d. 1584.
Ivan, son of Anastasia, Ivan's first Czarowna, killed by his father.
Feodore,
m. Irena, sister of Boris Godonof.
b. 1571.
r. 1584.
d. 1598.
supposed to be poisoned by Boris Godonof.
A Princess, b. 1592, supposed to be poisoned by Boris Godonof.
Dmetri,
b. 1581.
d. 1591, murdered by the order of Boris Godonof.
m. married.
b. born.
r. began to reign.
d. died.

RESULTS OF AN EXAMINATION OF THE RECORDS OF THE LIVERPOOL SELF-REGISTERING TIDE GAUGE, FOR THE YEARS 1854, 1855, AND 1856.

By Lieut. Murray T. Parks, R.N.

(READ 5TH MARCH, 1857.)

In April, 1855, Lieut. Lord, my predecessor in the office of Marine Surveyor of the Port, read a paper to your Society, giving a full description of the Self-registering Tide Gauges, established by the Liverpool Dock Committee, at Hilbre Island and St. George's Pier-head. These have now been three years in operation, during which time experience has shown the necessity for some minor alterations in the details of their arrangements, which have been carried out under the direction of the Dock Surveyor, and the execution of which prevents my submitting to you an unbroken series of observations. The alterations at Hilbre Island have been the most extensive; and have been so recently completed as scarcely to afford time for a fair comparison of the results from the two stations, which, however, do not present any very material difference. It is probable that several years must elapse before data can be gathered on which to found accurate general conclusions; yet it may be interesting to glance at the more remarkable of the tidal phenomena already chronicled, confining ourselves at present, for the reasons assigned, to the records of the Liverpool gauge.

The diagrams laid upon the table exhibit the daily oscillations of the tidal wave above and below the well-known standard of the Old Dock Sill; while the daily record appended of the general direction and horizontal motion of the wind, and state of the barometer—these particulars being furnished by Mr. Hartnup, of the Liverpool Observatory—indicates the operation of atmospheric influences upon the tidal action. It will be seen that lapses in the series of observations have been endured at different seasons and for unequal periods in the several years treated of, which will account, to a certain extent, for apparent inequalities in the annual result; but, while slight inequalities may perhaps be anticipated, it will be found

that through the ever-changing aspect of tidal action, and atmospheric influence, each year producing some singular discrepancies, a constant mean exists, from which the annual variation will probably prove eventually to be almost inappreciable.

Our records extend, in the three years under discussion, to the number of tides, as follows—in 1854, 653; in 1855, 678; in 1856 to 651 tides. An annual course complete would comprise about 706 tides. Taking, then, the records of these tides, and the level of the Old Dock Sill for a point of comparison, we obtain the following means—

Year.	Mean of High Water above O.D.S.	Mean of Low Water below O.D.S.	Range of Tide.	Mean Level above O.D.S.
1854	15.424 feet	5.544 feet	20.968 feet	4.940 feet
1855	15.425 „	5.570 „	20.995 „	4.928 „
1856	15.515 „	5.449 „	20.964 „	5.033 „
Mean of means	15.455 „	5.521 „	20.976 „	4.967 „

Year.	Ordinary Spring Tides.			Neap Tides.		
	Mean of High Water above O.D.S.	Mean of Low Water below O.D.S.	Range.	Mean of High Water above O.D.S.	Mean of Low Water below O.D.S.	Range.
1854	18.985 feet	8.611 feet	27.596 feet	11.698 feet	1.394 feet	13.092 feet
1855	18.388 „	8.194 „	26.582 „	11.527 „	1.438 „	12.965 „
1856	18.503 „	8.166 „	26.669 „	11.641 „	1.315 „	12.956 „
Mean of means.	18.625 „	8.324 „	26.949 „	11.622 „	1.382 „	13.004 „

From the above, the mean level for ordinary spring tides, for the three years, is respectively, 5.187 feet, 5.097 feet, and 5.169 feet; and for neap tides, 5.152 feet, 5.045 feet, and 5.163 feet above the Old Dock Sill; giving as the mean of means 5.135.

The highest tidal level attained in each year occurred

in 1854—29th January, at 11-45 a.m., wind from W., and strong gale, 21 feet above O.D.S.;

in 1855—25th October, at 11-30 p.m., wind from W., and strong gale, 21 feet 9 inches;

in 1856—16th October, at 0-15 a.m., wind from W.N.W., and strong gale, 22 feet 11 inches;

and the lowest tidal level below the standard occurred

in 1854—8th Sept., at 6-45 a.m., wind Easterly and light, 10 ft. 8 in.
in 1855—20th Jan., at 7-45 p.m., wind do. moderate, 10 ft. 8 in.
in 1856—8th March, at 7-45 p.m., wind N.N.W. and light, 11 ft. 11 in.

giving the extreme range for each year—

1854.....31 feet 8 inches,
1855.....32 „ 5 „
1856..... .34 „ 10 „

It will be observed that the highest tides by no means denote the greatest range of tide, since it appears as if on those occasions the extraordinary rise were due to a general elevation, from atmospheric or other causes, of the sea level over which the tidal wave traverses ; thus the greatest range of a tidal wave occurred in each year as follows—

In 1854, on the 28th of February, 30 feet 7 inches from low to high water of the same tide, the high water at 0-15 a.m. attaining the level of only 20 feet 2 inches above O.D.S.

In 1855, on the 25th of October, the range was 29 feet from low to high water of the same tide, the high water at 11 a.m. 19 feet 10 inches above O.D.S., this being the tide preceding that which in the evening of the same day attained the highest level of the year; but the general elevation of the sea level having prevented the ensuing low water from receding to its previous level, the p.m. tide, though rising nearly two feet higher, did not attain the range of the morning tide.

In 1856, on the 6th of April, the range was 32 feet 5 inches from low to high water of the same tide, the high water at 0-10 p.m. 22 feet 5 inches above O.D.S.

The lowest high water levels in each year were—

in 1854, on 15th October, at 5-30 a.m., 9 feet 3 inches above O.D.S.
in 1855, on 25th April, at 6-30 p.m., 10 „ 1 „ „
in 1856, on 15th March, at 6-15 a.m., 9 „ 6 „ „

and the least range of the tidal wave was in 1854, on 15th October, coinciding, in this instance, with the lowest high water level, from high to low water, 7 feet 9 inches; in 1855, on the 27th March, from low to high water at 7-15 p.m., 8 feet 8 inches; and in 1856, on the 8th October, at 5 a.m., from high to low water, 10 feet 2 inches.

In conclusion, it may be useful to see how far the registered results coincide with the calculated and predicted heights of tides, taking for this purpose those tides when high water occurs between 6 a.m. and 6 p.m., being those to which the calculation of Holden's Tables refer.

We have the actual height in excess of predicted height, in 1854, on 231 occasions; in 1855, on 244; and in 1856, on 264.

The height has been less than predicted, in 1854, on 112 occasions; in 1855, on 95; and in 1856, on 64.

And the actual and predicted heights have agreed, in 1854, on 22 occasions; in 1855, on 15; and in 1856, on 11.

The greatest differences between the registered and predicted heights occurred as follows:—

HEIGHT IN EXCESS OF PREDICTION.

Feb. 17th, 1854—	2 feet	8 inches,	wind W.N.W. strong gale.
March 3rd, 1855—	2 „	11 „	wind N.W. moderate gale.
Jan. 22nd, 1856—	2 „	11 „	wind Easterly, moderate.

HEIGHT LESS THAN PREDICTED.

April 1st, 1854—	2 feet	6 inches,	wind S.W. moderate.
Dec. 19th, 1855—	2 „	9 „	wind S.E. strong breeze.
July 22nd, 1856—	1 „	6 „	wind N.W. light breeze.

STATE OF BAROMETER.

Max.	Min.
1854, Oct. 12th, 30.587 inches.	Jan. 7th, 28.762 inches.
1855, Jan. 12th, 30.669 „	Dec. 25th, 28.920 „
1856, Nov. 24th, 30.936 „	Jan. 24th, 28.759 „

HORIZONTAL MOTION OF WIND.

Max.	Min.
1854, Feb. 18th, 1039 miles.	Feb. 12th, 89 miles in 24 hours.
1855, Jan. 1st, 974 „	Jan. 11th, 77 „ „
1856, Nov. 24th, 879 „	Nov. 1st, 77 „ „

THE CHARACTERS OF MACBETH AND RICHARD THE THIRD, ACCORDING TO SHAKSPEARE, COMPARED.

By James Stonehouse, Esq.

(Read 21st May, 1857.)

It is curious to observe, in analysing the *personæ* of Shakspeare's works, how skilfully he has moulded them into shape, and how remarkably he maintains, throughout each play, their respective individuality. In examining the characters of Macbeth and Richard III., we find this to be most strongly exemplified. He places before us two men achieving the goal of their desires by treachery, violence, and fraud, standing as it were on the very hill-top of crime; with dispositions singularly opposite, yet succeeding alike, and dying alike, sword in hand, in the moment of defeat. They are both soldiers, statesmen, and of royal blood. Richard, the incarnation of wrong doing, is bold, crafty, and unscrupulous. Macbeth is the personification of vacillancy, fear, and boastfulness. Richard is innately wicked, while Macbeth cannot be said to be naturally so. One perpetrates acts of violence, impelled by daring and dauntless ambition, while the other is dragged, or rather drifted into crime, by temptation too potent for a weak and pliant mind to withstand. Here we have two men striving for power, pursuing the same ensanguined path, strewing it with acts of perfidy and violence. Both put aside all that stand between them and the glittering goal of their culpable designs,

> "A crown, that bright reward of ever daring minds;"

yet, how unlike in their respective idiosyncrasies.

Let us see, first, of what "perilous stuff" Macbeth is made. He seems conscious of his moral poverty, and want of resolution. He says of himself, when compassing the destruction of Macduff and his race, that there must be

> "No boasting like a fool,
> This deed I'll do before the purpose cool."

Lady Macbeth, who may be supposed to know her husband well, thus strikes the key note of his character—

> "Yet do I fear thy nature,
> It is too full o' the milk of human kindness
> To catch the nearest way. Thou wouldst be great;
> Art not without ambition; but without
> The illness should attend it. What thou wouldst highly
> That wouldst thou holily; wouldst not play false,
> And yet wouldst wrongly win."

Lady Macbeth taunts Macbeth with being "infirm of purpose," and he feels, himself, that he is wishful to mount the pinnacle of power, but needs sufficient resolution to tread the slippery rounds of the ladder that leads to it. He says,

> "I have no spur
> To prick the sides of my intent, but only
> Vaulting ambition which o'erleaps itself,
> And falls on the other side."

With the world generally Macbeth appears, in his early career, to have stood in good estimation, for he prides himself upon having "won golden opinions from all sorts of people." The wounded sergeant from the battle-field extols his bravery, while the good king Duncan styles him "our valiant cousin," and "noble Macbeth," calls him "a worthy gentleman," and praises him on all occasions, at the same time rewarding him for his faithful services. Macduff terms him "our gallant partner." These laudations of the man, it should be remembered, are all uttered previously to his first great crime, so that we may conclude that Macbeth, until it was committed, had shaken hands kindly with the fair world in all his doings.

Richard's character presents a widely different aspect. Richard says of himself, that he is "subtle, false, and treacherous," that he has "neither pity, love, nor fear," and that love "foreswore him in his mother's womb." But proud of his noble birth, he says—

> "I was born so high
> Our aiery buildeth in the cedars top
> And dallies with the wind and scorns the sun."

Conscious of his strong will and determination, he exclaims,

> "I'll climb betimes without remorse or dread."

His mother's description of his course of life from infancy presents a frightful picture. It is certainly deserving of remark that Shakspeare has assigned the task of exhibiting "the innermost man" of his two heroes to

two women near akin to them. He seems to have observed that women are good judges of character. The Duchess says to her son,

> "A grievous burthen was thy birth to me.
> Tetchy and wayward was thy infancy:
> Thy schooldays frightful, desperate, wild, and furious;
> Thy prime of manhood daring, bold, and venturous;
> Thy age confirm'd, proud, subtle, sly, and bloody."

King Henry in the Tower shrinks at Richard's approach with instinctive dread, for he exclaims on seeing him,

> "What scene of death hath Roscius now to act."

Richard rather boasts than appears ashamed of his aptitude for dissimulation, and says,

> "I can smile and murder—while I smile,
> And cry content to that which grieves my heart."

He has no credence in goodness, either in himself or others. Macbeth, on the contrary, estimates the high character of "the gracious Duncan," and assigns his virtues as a reason why he should not slay him. Towards the close of his career we see him desiderating a good name. In his regrets the "milk of human kindness" is found flowing.

> "I have lived long enough. My way of life
> Is fallen to the sear and yellow leaf;
> And that which should accompany old age,
> As honor, love, obedience, troops of friends,
> I must not look to have."

While Macbeth thus exhibits a consciousness of the excellence of doing rightly, and trembles while he acts wrongly, Richard appears to care little what he does, or what men think of him.

In the contrival and committal of the murder of Duncan the whole machinery of Macbeth's character is laid bare. He is always doubting as well as fearing the consequences of his acts. He listens with ready ear to the insidious proposals of his wife, yet reasons with himself as to the baseness of the suggested act of treachery. At one moment he declares,

> "We will proceed no further in this business,
> He hath honored me of late;"

while in a few minutes afterwards he arrives at another conclusion, worked up to a state of false excitement, by the upbraidings and sneers of his companion. We find him then stringing up his loosened nerves with a sort of artificial determination, for he exclaims,

> "I am settled, and bend up
> Each corporal agent to this terrible feat."

In committing the murder of Duncan how admirably is Macbeth's irresolute disposition displayed. Fears and doubts are tossing tumultuously within him. Previously to entering the chamber of his victim his agitation is extreme, while his exclamation, "if we should fail," shows how uncertain he is of success. He dreads the very ground he walks upon betraying him;

> "Thou sure and firm set earth,
> Hear not my steps, which way they walk, for fear
> Thy very stones do prate my whereabout."

The very fact of bringing away the daggers from the chamber proves how completely unnerved he was, and how "brainsickly of things" he must have been," when he thought he heard voices upbraiding him, and bidding him "sleep no more." Look again at his speedy remorse. The appearance of his "hangman's hands" appals him, while the blood is already wet upon them, and his frantic terror is exhibited at the very thought of revisiting the scene of horror.

> "I'll go no more,
> I am afraid to think what I have done;
> Look on 't again I dare not."

Now let us see how Richard feels and acts under circumstances which would be likely to try a man's nerves. He has no "compunctious visitings." He is equally insensible to every tender or generous emotion. Virtue in others Richard despises, meekness and gentleness he ridicules; while he appears to abnegate the existence of righteousness either in himself or others. Richard is no hypocrite. He is a rank dissembler. The hypocrite makes truth serve the purpose of falsehood. The dissembler is content with making falsehood serve his own particular purpose. Richard dissembles with the Lord Mayor and the city authorities. He dissembles when he refers to Scripture and Sacred things. He dissembles with Buckingham. He dissembles with Lady Ann. He dissembles when he pretends to weep on learning the news of king Edward's death.

> "Sorrow's the mode
> And every one at court must wear it now.
> With all my heart—I'll not be out of fashion."

Under similar circumstances Macbeth would have acted the hypocrite. He had neither the wit nor ability to dissemble. Macbeth sickens at the thought and sight of blood. Richard is indifferent whether he sheds it himself, or causes it to flow by the agency of others. Richard considers deeds of violence as necessary to his elevation. Macbeth trembles at the

very thought of them. Richard is energetic in all he does, Macbeth vacillates and procrastinates. Richard thinks and acts for himself, Macbeth is a mere machine, wound up and directed as it were by a daring, unscrupulous, and impetuous woman, and the apparently supernatural movers of his destiny.

Richard stabs young Edward, after the battle of Tewksbury, without one grain of remorse; he kills king Henry like a butcher, and jests on the occasion,

> "What! Will the aspiring blood of Lancaster
> Sink in the ground? I thought it would have mounted.
> See how my sword weeps for the poor king's death."

He contrives the murder of Clarence without hesitation. He woos and discards Lady Ann without one touch of feeling. He causes the death of the two young Princes in the Tower without a pang of remorse. His greeting of Clarence's murderers is quite hilarious, and contrasts singularly with Macbeth's irresolution in engaging a third ruffian to assist in the assassination of Banquo, for fear that those already employed should not prove sufficient. Richard says to the ruffians,

> "How now, my hearty stout resolved mates,
> Are you going to despatch this thing?
> I like you, lads,—about your business strait
> Go! Go! Despatch!"

Richard's reception of Tyrell after the murder of the Princes, shews how callous he is to all human sympathy.

> "RICHARD. Kind Tyrell, am I happy in thy news?
> "TYRELL. If to have done the thing you gave in charge
> Beget your happiness, be happy then,
> For it is done.
> "RICHARD. But didst thou see them dead?
> "TYRELL. I did, my lord.
> "RICHARD. And buried, gentle Tyrell?
> "TYRELL. The chaplain of the Tower hath buried them,
> But where, to say the truth, I do not know.
> "RICHARD. Come to me Tyrrell soon at after supper,
> When thou shalt tell the process of their death.
> Meantime but think how I may do thee good,
> And be inheritor of thy desire."

No obstacles stand in Richard's way, no difficulties daunt him, nor impede his onward march. Everything and person that oppose him he "removes" without one spark of remorse, regret, or hesitation; while Macbeth shudders at retrospection, trembles at the present, and is "full of saucy doubts and fears" for the future.

The murders Richard commits, it will be observed throughout, have an especial purpose; but Macbeth slaughters with a blind fury incited by his fears. As, for instance, in his wholesale butchery of Macduff's family, which could by no means advance his fortunes.

In the closing scenes of these two men's lives, we still see in what a masterly way Shakspeare works out their individuality. Although we find Richard somewhat flurried on learning that Richmond is on the seas expecting the aid of Buckingham, with an intention to land and dispute his right to the throne, yet we find him speedily resuming his presence of mind, acting with his accustomed promptness and energy; weighing his chances, making the disposition of his forces skilfully, and issuing his orders with precision. As the hour of conflict approaches, he attends to the general as well as particular details relating to the coming battle: and though the visions of the night have somewhat daunted him, he quickly shakes off all despondency, and is soon "himself again."

During the progress of Bosworth fight, Catesby declares that

> "The king enacts more wonders than a man.
> Daring and opposite to every danger,
> His horse is slain, and all on foot he fights,
> Seeking for Richmond in the throat of death."

Though the day goes against him, and he is urged to save himself by flight, he spurns the idea, declaring that "I have set my life upon a cast, and I will stand the hazard of the die." Richard abides by that cast, seeking Richmond everywhere in the thickest and hottest of the fight, till at length he encounters him. He meets him as a brave man should do his foe, and then, with courage radiant to the end, the last Plantagenet dies as unyieldingly and as sternly as he has lived.

Let us examine the incidents connected with the death of Macbeth, and his conduct previous to that event. As the time of his fate approaches, he is full of hurry and confusion, vaunting and despondency. Now leaning his slender faith upon the staff of the predictions of the phantoms raised by the wierd sisters; now boasting that he has "never sagg'd with doubt nor shook with fear," yet almost in the next breath confessing that he is "sick at heart." Now do we see how skilfully Shakspeare exhibits the flowing of the "milk of human kindness" in Macbeth's disposition. He proves that he sincerely loves his wife, for when he learns that she is sick, although encompassed by danger and the difficulties of his position,

he enquires of the physician, with a tenderness and pathos most touching—

> "Cans't thou not minister to a mind diseased,
> Pluck from the memory a rooted sorrow;
> Raze out the written troubles of the brain,
> And with some sweet oblivious antidote
> Cleanse the stuff'd bosom of that perilous load
> Which weighs upon the heart."

Macbeth next exhibits the feebleness of his temper and irresolution in calling for his armour. Although told that "it is not needed yet," he orders it "to be put on," and bids the armorer "despatch;" yet in the next breath petulantly commands him "to pull it off," and then directs that "it may be brought after him." Any energy he exhibits, is the energy of despair. His is an impelled courage, arising from the distracting state of his affairs, yet here again the milk of human kindness is discernible. He learns at this juncture that his wife is dead, and though he has but just shown some energy in ordering his captains "to hang out their banners," and boasts that "his castle will laugh a siege to scorn," his soul melts at the fatal news, and he utters the fine soliloquy commencing,

> "She should have died hereafter."

When Macbeth learns that Birnam Wood is moving he becomes panic stricken, and his belief in the predictions of the phantoms begins to waver; he still keeps up some show of courage—yet see how his irresolution again manifests itself.

> "If this which he avouches does appear,
> There is no flying hence, nor tarrying here.
> I 'gin to be aweary of the sun,
> And wish the estate o' the world were now undone."

He then plucks up heart of grace, and with a despairing effort exclaims

> "Ring the alarm bell. Blow wind! come wrack!
> At least we'll die with harness on our back."

Pressed on all sides, he declares himself like a bear "tied to a stake," but consoles himself with the recollection of the prophecy, that "none of woman born can harm Macbeth." His want of determination restrains him from falling "Roman-like on his sword." But how unlike to Richard is he at the last push of his career? Richard, as we have seen, seeks Richmond everywhere; Macbeth avoids Macduff throughout the day. When Macduff meets him, unlike Richard who courts instead of shuns the conflict, Macbeth stops to parley, and tells Macduff plainly that of "all men else I have avoided thee;" and even when swords have been crossed he still clings to

the hope of escape by endeavouring to intimidate Macduff by announcing that he "bears a charmed life." Macduff's declaration of his being untimely ripped from his mother's womb drives Macbeth to despair, and he raves over the overwhelming announcement like one possessed. But Macduff still pressing the tyrant to the encounter commands him to yield as a coward—he must yield

> "And live to be the show and gaze o' the time."

Macbeth then finding words of no avail, with a sort of frantic energy fights without skill or judgment, and meets at length the soldier's death which he did not merit.

Thus Shakspeare, from the first to the last in these two remarkable plays, works out the characters of his heroes with surprising skill. It should be recollected that while the poet exhibits the two monarchs as deeply steeped in crime, it is a great question whether he has been truthful in doing so. Of Richard's extreme culpability there have been doubts raised; while Macbeth, it has been asserted, was a man totally different from what we find him on the stage. In the case of Richard, Shakspeare depicted him the monster he seems to be, doubtless to gratify the prejudices of his royal mistress, whose Tudor blood ran adverse to that of York, and who entertained all the Lancastrian dislike to those who mustered under the standard of the pale rose. Shakspeare in this fully exemplifies his own assertion in Hamlet—

> "That it were better to have a bad epitaph
> Than the players' ill report."

LIVERPOOL LIBRARY.

(1)

(2)

HISTORICAL SKETCH OF THE LIVERPOOL LIBRARY.

By P. Macintyre, Esq., M.D.

(Read 14th May, 1857.)

In the present year, 1857, when we look at Liverpool as the first mercantile port in the world, with her docks and her ships, her 400,000 inhabitants, her railways, her electric telegraphs, her penny newspapers, and her free libraries, it is with no small difficulty that we can go back a hundred years, and picture to ourselves the public and private condition of our great-grandfathers in "the good old town" in 1757. Even then, however, Liverpool was a thriving little seaport. Her population was only 24,000, but the number of her vessels of all sizes (and the largest of them was but small) had increased from 15, a century before, to 437. She possessed two wonderful docks—the Old dock, and the Salthouse dock—the safety and convenience of which were the admiration of all who saw them, and she participated largely in the profits of the slave trade.

In 1757 England was at war with France. Privateers were fitted out, in Liverpool and other ports, amidst great excitement. Travelling from place to place was very slow, and not very safe. Newspapers and periodical publications were few, and their intelligence scanty and long after date; consequently, the events of the war, and the important domestic events of the country, must have been only imperfectly known. We cannot but suppose that the enterprising inhabitants of Liverpool must have felt a deep interest in the victories and defeats of their countrymen by sea and land, as well as in such passing events as the court-martial and execution of Admiral Byng, and in the romantic and long-delayed apprehension and condemnation of Eugene Aram, for the murder of Clark. This "pursuit of knowledge under difficulties" resulted in the establishment, in September, 1756, of "Williamson's Liverpool Advertiser," a weekly newspaper which—after an honourable career of one hundred years—died but the other day as "The Liverpool Times."

The foundation of one of our public institutions, the "Liverpool Library," took place also at this time. A few gentlemen had for a year or two, prior to 1757, been in the habit of meeting together for the purpose

of discussing literary subjects, and of reading a portion of the periodical publications of the day. They met from time to time at the house of Mr. William Everard, an eminent mathematician and a schoolmaster, who lived in St. Paul's square. The small collection of books brought out on these occasions was kept in a corner cupboard in Mr. Everard's parlour. It was in the year 1757, however, when—the books becoming more numerous, and requiring to be transferred from the cupboard to a large chest—that the idea of circulating them among the members of the club came to be entertained and acted upon.

"The success of this little society," says the preface to the last edition of the catalogue, "and the benefit derived from the circulation of the books, suggested the desirableness of extending the plan; and in the beginning of the year 1758, several of the principal merchants, professional men, and tradesmen of the town, including probably all the members of St. Paul's Square Club, 'with the view,' as their prospectus states, 'of furnishing an ample fund of amusement and improvement at the easiest expense,' formed themselves into a society for establishing a circulating library. The scheme was warmly taken up, and on the 1st of May, 1758, the LIVERPOOL LIBRARY was founded. The contribution of each member, on joining the society, was one guinea, after which an annual subscription of five shillings was to be paid so long as he should choose to continue a member. The gentlemen of the Coffee-house Club (probably a club connected with the St. George's Coffee-house, in Castle street, at which the committee and general meetings of the Library assembled for many years), presented a collection of books, which was considered as *their* first subscription of a guinea each."

In this way, then, and from these beginnings, arose the Liverpool Library, which enjoys the proud distinction of being *the first circulating library*, not only in England, but in Europe. Some of its most important laws, notwithstanding that a century has elapsed since they were framed, remain, in principle, the same to this day; and this code of laws has frequently been made use of as a model for other institutions of a similar kind.

Shortly afterwards, but still during the year 1758, the first catalogue was published, and contained 450 volumes. It also contained a list of the proprietors, 109 in number, in which may be recognised many family

names still holding a high position in Liverpool.* This list of the original proprietors of the Library is not given here, as it was reprinted and introduced into the last catalogue, a copy of which, complete up to the present time, has just been presented to the Historic Society by the Library Committee.

Mr. Everard, who was now appointed librarian, removed from St. Paul's Square to Prince's Street, where he was to find a proper room for the books, and have a reasonable sum "for that and his trouble." They did not long remain here, however, for in 1759 they were again removed to a building in John street, belonging to Mr. Everard. The site of this building, on the west side of the street, about midway between Cook street and Dale street, is marked on the map of Liverpool, published by Perry, in 1769. The Library occupied the first floor, and was approached by a flight of steps, at the end of a lobby passing through the centre of the building. For this room "and his trouble," Mr. Everard received ten pounds a year.

The announcement in their original address, that "the collection of valuable books will be constantly enlarging, in proportion to the increase of the fund," continued to be fulfilled, so that in the year 1786 it had enlarged so much beyond the accommodation afforded to it by the room in John street, that a more spacious one, in a new building in Lord street, erected on the principle of a Tontine, was obtained, at a rent of eighteen pounds per annum.

By the numerous catalogues published during the one hundred years of the Library's existence—and copies of which are on the table for inspection—the progress of the Library can be seen. The 450 volumes in 1758 had increased in 1801 to 8,150; in 1830, to 21,400; in 1850, to 36,760; and in the present year the Library possesses 46,000 volumes. As the collection of books thus increased in value, so did the fund which provided them improve. The original payment of one guinea for a share in 1758, was raised in 1770 to a guinea and a half; in 1772, to two guineas; in 1777, to three guineas; and in 1784, to five guineas. The present price of a share is nine pounds ten shillings. The annual subscription, in like manner, increased by degrees. It began at five shillings,

* The first name on this list is that of William Goodwin; and out of the whole of them he is the only one styled "esquire," probably because he was the Mayor for that year.

and continued so for fourteen years; it was then raised to six shillings, at which it remained for twenty-two years; then it rose to ten shillings and sixpence, and continued at that for twenty-four years; then to fifteen shillings, lasting six years; and the last change in the annual subscription raised it to a guinea, at which it has remained now for thirty-three years.

A good deal of labour has been bestowed at different times, by proprietors of the Library, on the compilation and classification of the Catalogue. In July, 1801, the thanks of the Committee and a present of books, were given to Mr. Wilcocke, for his services in these respects; and in December, 1814, a copy of the Catalogue itself accompanied a similar vote of thanks to Mr. Wilckens. In 1830, and again in 1850, the reconstruction of the Catalogue was entrusted to a Sub-committee, each member of which was presented with a copy, beautifully bound, in grateful acknowledgement of his services.*

The *printing* of the Catalogue has always had a great deal of care bestowed upon it. That of 1801 was printed by Mr. John M'Creery, a gentleman well known in Liverpool as a printer, and as the friend of Roscoe. His beautiful editions of Roscoe's Works obtained great fame both for himself and for Liverpool, proving to the world that London itself could not surpass this town in some kinds of elegant typography. The catalogue of 1830, which is also a very fine specimen of printing, issued from the press of Mr. David Marples, whose name has long ranked high as a printer. The last catalogue, that of 1850, was printed by a member of this Society, Mr. Thomas Brakell; and gave such satisfaction to the sub-committee, that the proprietors, at a general meeting, unanimously passed a complimentary resolution to this effect, and directed that a bound copy be presented to him, with a copy of the resolution.

Mr. William Everard, the first librarian, continued so for twelve years. A gentleman of the name of Broderick succeeded him, and remained for two years, at the increased salary of fifteen pounds. Mr. George Barker was then appointed librarian, at twenty guineas per annum, and held the office for the long period of forty-six years. A handsome silver cup was presented to him, as a compliment after his faithful services for so many years. His portrait, painted by Williamson, and presented to the Library, still hangs

* As a member of these Sub-committees, the writer alone has the pleasure of possessing copies of the Catalogue, so presented, on both those occasions, with an interval of twenty years between them.

in the consulting library above stairs. On the retirement of Mr. Barker from declining health, Mr. Phœnix, the sub-librarian, was appointed, and filled the office till a short time before his death, having been attached to the Library thirty-nine years. Mr. Perris, the present librarian, had also been sub-librarian, and has now been in the Library, "man and boy," forty-two years. From these data it would appear that the duties of the office have not been very detrimental to life. These duties, however, have increased, and are every day increasing. The number of volumes taken out and returned averages 430 per day; and the system of book-keeping now in use requires great attention, and works exceedingly well.

In the catalogue of 1760, the fifteenth law provides—"That each subscriber shall have a medal, for which he must pay one shilling; and which must always be ready to be shown, if required, to the librarian, when a book is sent for, to prevent him being imposed upon by sham messages, or pretended servants." These medals * are relics of the olden time, and are now very rare, as they have not been in use for more than sixty years.

In all the subsequent catalogues, beginning with that of 1814, there may be seen on the title-page an engraving, from a beautiful design by John Gibson, the celebrated sculptor. It represents "Wisdom elevating the Soul." Gibson was then a young man of great promise in the profession in which he is now so eminent a master. (See plate viii.)

In the year 1800 a very important event in the history of the Library took place. It had been in existence for more than forty years, and the accumulation of the books again rendering more extensive premises necessary, it occurred to some of the proprietors, that a good opportunity was thus afforded for extending the Institution into one, which should combine with the Library, a News-room and Coffee-room in the same building. At the annual meeting of the members in May, 1800, a proposal was submitted, to raise funds, by subscription, for the erection of such a building. The proposal was approved of, successfully carried into effect, and resulted in the erection of the building so well known as the LYCEUM.

* I have had the pleasure of presenting one of them to the Society this evening. On one side of it is represented a bookcase, with the words "The Liverpool Library" above it. On the other, in prominent relief, is the head of Cicero, with the initial letters M. T. C. This medal was exceedingly well engraved on the title-page of the Catalogue of 1801, long after the use of the medal itself had ceased. (See plate viii.)

To one part of this, the Library or Rotunda, expressly constructed for the purpose, the books were removed in 1803,

It is impossible, in such a paper as this, to give even a list of the names of all the eminent men, who have taken an active interest in the progress of the Liverpool Library, during its long career. Suffice it to say, that almost every mercantile or professional man, distinguished in literature or science in Liverpool, was among its members. The roll of its Presidents, during its first half century, contains, among many others who did it good service, the names of Roscoe, Dr. Currie, the Rev. John Yates, Mr. Rathbone, Dr. Worthington, Dr. Rutter, Dr. Lyon, Mr. Evans, (afterwards Sir W. David Evans and Recorder of Bombay,) Mr. Daulby, Dr. Carson, Archdeacon Brooks, and Mr. Fletcher Raincock. Not one of these now survives.

Out of the many who have presented their works to the Library, I may mention one who, in his day, was a prominent character in the town, though in a humble position. This was William Hutchinson, who for nearly forty years was dock-master in Liverpool. He presented to the Library a series of Observations on the tides, &c.*

These Observations are, I believe, of great value, and the Library has been applied to more than once, to allow them to be examined for scientific

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* These Observations are in manuscript, and contain the following subjects :—" On the moon's age—solar time of high water—heights of the tide in feet and inches—the tides' successive differences in minutes—the velocity of the winds calculated in miles per hour, after Smeaton—the state of the barometer at noon, and of Fahrenheit's thermometer at eight in the morning, and for the last two years at noon—the quantity of rain, and remarks on the weather, from the beginning of 1768, to August 10th, 1793, a period of twenty-five years, seven months, and ten days. Presented to the Liverpool Library, with the exception of eleven pages cut out to give to Mr. Richard Holden, to make out the 3000 observations mentioned in his preface to his Tide Table, by which he founded a theory from natural causes to agree therewith."

Speaking of these manuscripts, Mr. Hutchinson himself says, " At the request of my friend Mr. Ferguson, the astronomer, who with great labour and pains furnished me with large schemes, tables, plans, &c., relating to the tides : in the year 1764 I began and have continued observations on the time and height of the tides, flowing at the old dock-gates, about three miles from the mouth of the river, which is so broad, that as a branch of the sea, no land floods have any effect on the heights of the tides in the river opposite the town, where the least flow of water that I have observed in neap tides was nine feet at the dock-gates. I had a tide clock made, that was planned by Mr. Ferguson ; I kept the clock going as near as I could to solar time."

purposes. In the year 1833, Mr., now Sir J. W. Lubbock, Professor Whewell, and Mr. Dessiou, being a committee of the British Association for the Advancement of Science, were engaged in the investigation of the phenomena of the tides, and learning that the Liverpool Library possessed these MS. observations, they, after examining them, applied to the committee for the loan of them, to aid them in their discussion of the subject. For this purpose the Committee lent them to the Hydrographers' Office at the Admiralty, where they remained nearly three years; and the result, to which they contributed in no small degree, was a series of papers published in the Philosophical Transactions. They were afterwards required to be produced before a Committee of the House of Commons, on the question of the "Tidal standard" dispute between the River Dee Company and the Commissioners of the Admiralty; and the papers were examined with great interest by the members of the Parliamentary Committee.

Mr. Hutchinson died in 1800, after a life of much usefulness. He was a very ingenious man, and many of his inventions were turned to good account.*

The Committee of the Liverpool Library have done their work *con amore* from the earliest time up to the present. They have with great care, and according to their second law, "provided a fund of literary instruction and entertainment, adapted to the various tastes of the proprietors, among whom the books are to be circulated." An absence of selfishness, and a constant desire to promote the interests of the Library, kept up a harmonious feeling amongst them, and has characterised them to the present day.

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* It is stated by Mr. Brooke, in his very interesting work, "Liverpool during the last quarter of the 18th century," that "Mr. Hutchinson was accustomed to observe a particular day in each year, as one of strict devotion, in commemoration of his providential deliverance at one period of his life, when, after the loss of the vessel in which he sailed, he, and others of the crew of the vessel wrecked, being without food, had drawn lots to ascertain which of them should be put to death, in order to furnish a horrible and revolting meal to the survivors. The lot fell upon Mr. Hutchinson, but he and his fellow-sufferers were providentially saved by another vessel which hove in sight."

Mr. Brooke says that Mr. Hutchinson was appointed dock-master in 1760, but this must be a mistake, as I find in 'Williamson's Liverpool Advertiser,' of the date 11th May, 1759, that Robert Murphy, a joiner in the privateer New Anson, had attempted to shoot him. He is there described as "dock-master."

During the latter part of the last century, the meetings of the Committee of the Library were of a more social character than of late years. They took place principally at the Star and Garter Hotel in Paradise Street, and as the members met in the evening, nothing was more natural than that they should combine pleasure with duty. Meeting at seven o'clock for despatch of business, conversation and supper followed. These meetings became in some degree celebrated. When men of letters or science visited the town, members of the Committee were privileged to introduce them, and discussions of much interest often took place. The Committee meetings of the Library, under the presidency of Roscoe, Currie, Rathbone, and others, came to be considered the most intellectual and agreeable ever held in Liverpool.*

In the year 1774 the President of the Library was allowed to nominate a Lady-patroness for his year of office. She was presented with a catalogue handsomely bound, and had for the time, all the privileges of a proprietor. This appointment continued for 54 years, until the presidency of my late esteemed friend David Stewart Wylie; who upon his appointment in 1828 declined to nominate a Lady-patroness; and all his successors have been ungallant enough to follow his example. I may remark here, that from the commencement of the Library, it has had many ladies among its proprietors. One of these, the late Miss Twentyman, of Duke Street, whose name appears in several of the old catalogues, and whose death took place a few months ago, had been a proprietor in the Library for 78 years.

The proprietors of the Library have always shown the greatest readiness in giving access to all their books, to authors or others, not proprietors,

* On the 13th of August, 1799, a rather amusing resolution was passed. The entry in the Committee Book is as follows:—"This day for the first time the Committee met at four o'clock in the afternoon, and having transacted the necessary business of the Library, they dined together at five o'clock, and spent the day with harmonious pleasantry. Resolved unanimously, that the monthly Committee meet henceforward on the second Tuesday in the month, at three o'clock, and that they afterwards dine together; that dinner be on the table at four o'clock *precisely*, and that the bill be called at six o'clock, when such gentlemen as chuse may depart, and such as chuse may club again; that red port be the only wine allowed, and that if any gentleman prefer white wine, he pay for it, distinct from his share of the general shot; and that all the wine be brought up in the original bottles from the binn, and decanted in the Club-room."

who might wish to consult them. Also, for many years past, by a special regulation, any proprietor, engaged in any literary or scientific investigation, has been permitted to have the use, at his own house, of a greater number of works, than the number generally allowed. This privilege has been much used, and highly esteemed; and by none, I believe, more than by our own hon. secretary, the Rev. Dr. Hume. The late Dr. Lingard used to say, "I owe a debt of gratitude to the Liverpool Library, for affording me many facilities when writing my History of England, and without those it would have cost me many journeys to London." Many works now in the Library have been presented to it by their authors, in acknowledgement of such benefits conferred on them in this way. This liberality, however, on the part of the Library has been sometimes abused, and valuable books have occasionally been lost. Among these were a very fine copy of Boccaccio, and one of "Higden's Polychronicon." The latter work was in black letter, printed by Caxton, 1495, and was often referred to by book collectors. It must have been of great value, as I understand that an imperfect copy was sold for £150, at the sale of the late Sir Mark Sykes. Every exertion was made to recover the book, but without effect.

The Library has also been liberal in making donations of its surplus copies of books to our local institutions, such as the Blue Coat School, the Northern and Southern Hospitals, the Sailors' Home, &c. The Free Public Library too, now so rich and so vigorous, received its *first* donation of books, amounting to more than 2000 volumes, from the Liverpool Library.

Lectures on scientific subjects, by distinguished individuals, have been frequently delivered in the lecture room of the Library. Among the names I have observed those of Garnet, Murray, Spurzheim, Webster, Dalton, Banks, Thelwall, Pemberton, Traill, and others.

In concluding this sketch of the history of this Library, during the hundred years of its existence, I may remark, that if that noble Institution, the Free Public Library and Museum, whose foundation-stone was laid the other day, with so glorious a beginning, but advance during the next hundred years in an equal ratio to the progress of the Liverpool Library, from *its*

humble origin, we may well be content. The first Address or Prospectus of the Library was issued in 1758 :—

> "As many kinds of useful and polite *knowledge* can no otherwise be acquired than by READING; an attempt to furnish the public with an ample fund of amusement and improvement of this kind, at the easiest Expense, can hardly fail of general Approbation.
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> "To answer this valuable purpose, the establishment of a LIBRARY in Liverpool, has often been wished for; and to gratify so laudable a Desire, a Scheme has been proposed, & is now carrying into Execution. The terms are moderate; and the prospect of Advantage is obvious and extensive; so that those Gentlemen and Ladies who wish to promote the *Advancement of Knowledge* will here have an opportunity of doing much good, by adding their assistance to that which the Scheme has already received.
>
> "A Collection of valuable Books, chiefly in the English language, is now purchased, agreeable to the annexed CATALOGUE; which will be constantly enlarging in proportion to the Increase of the Fund, and the generous *Benefactions* of those who think the Design worthy of their Attention."

The above illustrates the remark that there is "nothing new under the sun." It shows that what is felt, and spoken, and acted upon in the present day; that what inspires the munificent kindliness of a William Brown,—the desire to "furnish the public with an ample fund of amusement and improvement at the easiest expense"—had entered into the minds of a few kindred spirits in the town of Liverpool, when its streets were narrow, and its means were small. Although they kept their books for a time in a corner cupboard in Mr. Everard's parlour, yet we see that they were right in anticipating "the prospect of advantage" by the founding of this library. When we look at the progress it has made, and the benefits known and unknown that it has conferred, we can afford, even in the midst of our Free Libraries and Museums, to give honour to the men of a former day, for beginning so good a work, and in a spirit so pure and unselfish.

REMARKS ON ANTIQUE IVORY CARVINGS.

By Francis Pulszky, F.H.A.

(Read 23rd April, 1857.)

The facility with which ivory is carved, the polish it easily receives, and the mellow tone of its colour, recommended this material for sculpture from the earliest time of human civilisation. Already in Pharaonic Egypt, in ancient Assyria, in the earliest epochs of Etruscan, Greek, and Roman history, it was employed for ornamental purposes. The difficulties besetting, in ancient times, the communication with India and Inner Africa, whence ivory was brought, enhanced its value far beyond its present price; though the ancients knew of one other source of supply, now fully exhausted, viz., Northern Africa. The country between the Mediterranean and the Sahara was still, in the times of the Phœnicians and Romans, the dwelling-place of elephants. Hannibal had them tamed for the purposes of war; the Roman Consuls and Emperors transferred them to Rome, to be slain at the games of the Circus, or to carry the triumphal cars of victorious chiefs to the Capitol. The continuous drain exhausted, at last, the stock of elephants and their tusks in Northern Africa. No ivory comes now from the regions bordering the Mediterranean. Central Africa proved a more plentiful source, which, from times immemorial down to the sixteenth century, supplied Europe, by way of Egypt, with elephant tusks. In Egypt we see the elephant as a hieroglyphical character, on tablets anterior to the invasion of the Hyksos, therefore anterior to the Egyptian bondage of the Hebrews. The town of Abydos, (which means ivory city, since Abu is the name of elephant and ivory, in the language of ancient Egypt,) and the isle of Elephantinae,* both in Upper Egypt, received their names from the ivory, which was the staple article of their trade; and on the triumphal reliefs of the Ramessides we see regularly, among the tribute bearers, several negroes carrying tusks of elephants. Still,

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* The name of the island, *Philæ*, may likewise come from the word, *Fil*, an Elephant, in Arabic.

antique Egyptian carvings in ivory are rare. The dryness of the climate—to which we are indebted for the preservation of such perishable materials as wood, and the colours of the reliefs—proves destructive to ivory; for as soon as the animal glue which gives it consistency evaporates, it cracks, and crumbles to pieces.

Assyria and Persia were supplied with ivory from India and Bactria. The bearers of elephant tusks are never wanting in the triumphal processions of the eastern conquerors: we see them on the black marble obelisk of the Assyrian king Divanabar, in the British museum; and on the reliefs of the ruined palaces of Darius and Xerxes, in Persepolis.

The sculptors of Greece derived their ivory both from India and Africa; though it seems that the African, with its yellow tint and more agreeable sheen, was more frequently employed than the white Indian ivory, of chalky appearance; so much the more as the commerce to the East was often hampered by Persian wars, whilst Egypt exported the products of Africa without interruption.

In Greece, not only was ivory used for ornamental purposes, as in Egypt and Assyria, but statues of large dimensions were built up from this precious material, which likewise served for the insignia of royalty and priesthood, and, together with the purple, remained the symbol of princely power and sacerdotal honour through all the epochs of antiquity. By joining smaller bits of ivory, in a manner not yet sufficiently explained, even after the learned researches of Quatremère de Quincy, the Greeks carved colossal statues of this material, adorning them with enammelled gold—the only metal believed to be worthy of being joined to ivory. Some of the Chryselephantine statues became celebrated as wonders of the world, both for their precious material and the eminence of the workmanship. The Olympian Jupiter of Phydias, at Elis—his Minerva at Athens—and the Juno of Polycletus, at Argos—remained unsurpassed for beauty and magnificence. The great French archæologist and patron of art, the Duc de Luynes, had lately made a copy of the Minerva of Phidias, according to the description of the ancient authors, and its representations on medals vases and gems. His Chryselephantine statue was one of the most interesting objects of the great French exhibition of fine arts, and gave some idea of the magnificence and costliness of this kind of sculpture.*

* The statue cost the Duke 300,000 francs.

At the time when the conquests of Rome extended to the Sahara, to the upper cataracts of the Nile, and the course of the Euphrates, the facilities of communication throughout the empire supplied the mistress of the world with a great amount of ivory. It grew more common; it was lavished on the furniture of the houses of the rich to such extent, that Horace, to show that he is not rich, says, that neither ivory, nor a ceiling of gold, glitters in his house. Its principal use was for book covers (libri elephantini : see Vopisci Tac. 8, et pugillares membranacei operculis eburneis); and such was the profusion of ivory, under the later Emperors, that the poet Claudian, probably unacquainted with the fact that female elephants have no tusks, describes the great pachyderms of India roving through the woods without tusks, which, he believed, were extracted from their mouths, in order to supply the display of ivory at Rome. He did not surmise that a time should come when one single commercial house at Sheffield would yearly convert a greater number of elephant tusks into unpretending handles of knives and razors, than imperial Rome could import during a score of years.

When the rise of the Mohammedan powers interrupted once more the communication with India and inner Africa, ivory became again scarce and expensive. It was used for ornamenting the covers of sacred books, for portative altars and vessels of the Church, for the handles of croziers, sceptres, and swords, for the frames of mirrors, for marriage boxes and chess-pieces; but on account of the costliness of the material, all these sculptures were reserved for the use of the highest classes of society.

As to the ivory remains of classical antiquity, they are of excessive rarity. One only sceptre has been preserved to our days;* stiles for writing are more numerous; so are ornamented hair pins, toys, dice, scent-boxes. Admission-tickets to the theatres and amphitheatres have likewise survived the great catastrophies of history; and with them a few reliefs, amongst which the most important are the "Diptycha." We designate by this name large double ivory tablets, ornamented with reliefs on the outside, whilst the inside was covered with wax, on which the ancients used to write with metallic or ivory stiles. Diptychon means, originally, anything doubly folded; and therefore St. Augustine calls the oysters Dypticha; but the term was principally applied to ivory book-covers, or tablets for writing.

* It is published in Professor Gerhard's Centurien, T. lxxxvii. 5, 6.

The most interesting of these tablets were the Consular Diptycha, because we are able to assign a certain date to them; and as they were manufactured for the highest functionaries of the State, and presented to the Senators, we may presume that they are the best specimens of the art of the time, and therefore highly valuable documents for the history of art. They serve likewise to elucidate some dark points of Byzantine history; and afford most valuable information on the manners and customs of a period about which but scanty information can be gathered from contemporaneous authors, whose attention was principally directed to the development of the Christian dogmas, and who neglected political history, so far as it remained unconnected with the Church. Accordingly those ivories, which were always highly prized from the time of their manufacture up to our days, and remained the ornaments of the treasuries of churches and monasteries, attracted the attention of scholars immediately after the revival of letters. The Jesuit Wiltheim, Du Cange, and Banduri, the Byzantine historians,—the celebrated Hagenbuch,—the Benedictine Montfaucon,—the learned Florentine Senator Buonarotti,—the Prior Gori,—Professor Saxe,—Father Allegranza,—Bianconi,—Carroni,—Millin, the French Archæologist,—and Forsterman, the German,—published many of them, illustrating them by elaborate commentaries, and paving the way for a comprehensive view of the entire subject of antique Diptycha.

The ancient Romans did not like abstractions. Even in their chronology, the designation of years by figures, the era of the foundation of Rome, could not become popular; they preferred to call the year by the names of their annually elected chief magistrates, the Consuls, and to mention two names instead of a figure whenever they had to give a date, because the names reminded them instantly of the events of the year in question, which were mostly connected with the Consuls. Thus, for instance, instead of saying, In the year 690 of Rome, they said, Under the consulship of M. Tullius Cicero and C. Antonius. This custom implied a thorough knowledge of Roman history, and shows at once, why so much importance was attached to the register of the Consuls, the so called Fasti Consulares, increasing every year in bulk by two names. Roman chronology was, therefore, an epitome of Roman history to be mastered by everybody who took an active part in public affairs, that is to say, by all the citizens of Rome, as long as the Republic existed. When Julius Cæsar applied his genius to selfish aims, and to the violent destruction of the established

constitution of his country, by founding his monarchy upon the support of a standing army, more attached to his person than to Rome, and upon the favour of the lowest classes of the capital, he still had not the boldness to alter the forms of the Republic. His crafty successor, Augustus, developed upon principle what his grand uncle had by necessity left standing. The consuls remained, therefore, nominally the first magistrates of the empire, and continued to give the name to the year; and even when Constantine transferred the seat of the empire to Byzantium, and transformed it into a Christian state, the office and dignity of the Consuls was not discontinued. When Theodosius finally divided the Roman world into two independent states, it became even still more important, the Consuls being the last link of union between the two empires, and the symbol of their original union. One of them was always nominated at Rome, the other at Constantinople, and their joint names continued to designate the years, in the east as well as in the west, in preference to the reckoning by the years of Rome, and to the new-fangled era of the Emperor Diocletian, which survived him, under the name of the Era of the Martyrs, only amongst those whom he had persecuted—the Christians. The bulk of the people discarded alike the official era of the years of Rome and that of Diocletian, and continued to call the years by the names of the Consuls, though those chief magistrates no longer wielded any political power, and had but two tasks to perform—to give a name to the year, and to signalise their accession to office by magnificent games and feasts for all the people, and by gorgeous presents to the senators of the empire.

The most honorific of those presents were the Consular Diptycha,—sculptured ivory tablets covering the Fasti Consulares, or the register of the Consuls, from L. Junius Brutus down to the year of the donor, who was represented on the outside of the book-covers, clad in his consular costume, mostly sitting on the consular chair, and invested with all the insignia of his high office. His name and title, sometimes his signet, or the busts of the reigning Emperor and Empress, are seen on the top of the Diptychon. At the bottom, the largess of the new Consul is recorded by the representation of games in the Circus, and by the exhibition of the presents, which include money, palm branches as symbols of the prizes of the races and games, cakes for the people, and Diptycha for the grandees. It is by the inscription of the ivory tablets themselves that we know their destination—"To be presented to the Senators." One of them contains

some Greek Iambic verses, saying, "I, the Consul Philoxenus, offer these gifts to the wise Senate." Another Consul, Petrus, had an elegant Latin distichon engraved on his tablet, saying, in a similar way, "I, the Consul, offer these presents, though small in value, still ample in honours, to my senatorial fathers" And such, indeed, was the honour of ivory diptycha, that, by a decree of the Emperor Theodosius, nobody but the ordinary Consuls (to the exclusion of Consuls elect and Consuls by substitution, or Consuls honorary, and of all other officials,) were allowed to make presents of ivory book-covers; and the records we have of the inauguration of the Consuls mention always the presentation of the Diptycha, or Fasti Consulares.

From the remaining monuments of this class we see that their size, the material of which they were manufactured, the style of art and the representations carved on them, varied according to the rank of those for whom they were destined. Some of the Consular diptycha are of superior workmanship and choice ivory, others only of bone, and indifferently carved. On some we see the whole-length figure of the Consul, on others his bust, or even only his name. And all those differences relate to the receiver, not to the donor of the gifts, since we possess diptycha of the same Consul in bone and in ivory, some eminently, others rudely carved; again, some showing all the pomp and paraphernalia of Consulship, others plain and little adorned. Many of the Consular tablets, extant in the different museums and church treasuries of Europe, contain the full name and title of the Consul whose inauguration they record; some others are not inscribed, but the representation gives us a clue to the donor of the tablets; a few are anonymous, and cannot be traced to any certain date.

[Independent of Anonymous Consular Diptycha, and those which are Sacred or Mythological in their character, the following Inscribed Consular Diptycha were treated of.]

1. A.D. 248. M. Julius Philippus Augustus, and M. Julius M. F. Philippus, the younger, two leaves; one in the Fejérváry Collection—the other, formerly with Cardinal Quirini.
2. A.D. 308. M. Aurelius Romulus Cæsar, one leaf; formerly in the Gherardesca Collection.
3. A.D. 428. Flavius Felix, two leaves; one in the Imperial Library at Paris.
4. A.D. 430. Flavius Theodosius Junior Augustus, and Flavius Placidius Valentinianus Augustus, two leaves; at Monza.

5. A.D. 434. Flavius Areobindus, two leaves; at Milan, in the Trivulzi Collection.
6. A.D. 449. Flavius Asturius, two leaves.
7. A.D. 454. Flavius Aëtius, two leaves; at Halberstadt.
8. A.D. 487. Narius Manlius Boethius, two leaves; formerly with Cardinal Quirini.
9. A.D. 506. Flavius Dagalaiphus Areobindus, five leaves; two at Lucca.
10. A.D. 513. Flavius Taurus Clementinus, two leaves; in the Fejérváry Collection.
11. A.D. 516. Flavius Petrus Sabbatius Justinianus, three leaves; two in the Trivulzi Collection, one in the Imperial Library at Paris.
12. A.D. 517. Flavius Paulus Probus Pompeius Anastasius, five leaves; two at Paris, two at Berlin, one at Verona.
13. A.D. 518. Flavius Anastasius Paulus Probus Magnus, three leaves; two at Paris, one in the Fejérváry Collection.
14. A.D. 519. Flavius Anicius Justinus Augustus, one leaf; at Vienna.
15. A.D. 525. Flavius Theodorus Philoxenus, three leaves; two at Paris, one in the Fejérváry Collection.
16. A.D. 528. Flavius Anicius Justinianus Augustus, one leaf.
17. A.D. 530. Rufinus Orestes, two leaves; in the Soltykoff Collection at Paris.
18. A.D. 541. Anicius Basilius, two leaves; one at Florence, in the Collection of Antiquities.

[The Fejérváry Ivories now in the possession of Joseph Mayer, Esq., F.S.A., were described under nineteen historical divisions, extending from the time of the ancient Egyptian empire to the eighteenth century; and under three geographical divisions referring to Persia, India and China respectively. It may suffice to give the detailed account of two only.]

The first is the mythological Dyptychon of Aesculapius and Hygeia—the most beautiful of all the ancient reliefs in ivory. In the last century, it belonged to the treasures of the Florentine Museum of the Gaddi family; later to Count Michel Wiczay, at Hédervár, in Hungary. It has been published by Gori, by the learned Barnabite, Felix Caronni, and by the celebrated engraver, Raphael Morghen. (See illustration.)

On the right leaf of the Dyptychon, Aesculapius is represented standing on an ornamented pedestal, leaning with his thoughtful head on his right hand, which holds a scroll. The left hand is placed on his hip; a club, with a huge serpent coiling around it, and resting upon the head

of a bull, supports the figure, which is clad in the manner of Jupiter, the drapery covering only the lower part of the body. The god has a fillet (diadema) in his hair, and elegant sandals on his feet; his diminutive genius Telesphorus, the god of convalesence, clad in a cowl, stands close to him in the act of opening a volume. The group is placed between two pilasters, joined by a garland of oak leaves. One of them supports a casket of flowers on its Corinthian capital; the other has been, at some distant time, broken off.

On the left tablet Hygeia, with a chaplet (stephane) in her hair, leans against a tripod, round which coils a huge serpent, raising its head to the right hand of the goddess, who offers him an almond-shaped fruit, or cake. At the feet of the goddess of health, we see Cupid, sufficiently characterised by the quiver and bow, although he has no wings. On the top of one of the Corinthian pilasters there are the sacrificial vessels, the prochûs and the phiala,—the jug and cup for libations; on the other capital, the Bacchic child Iacchus opens a wicker basket (cista mystica) from which a snake is creeping out. On both the tablets, a label surmounts the representations, which contained the dedicatory inscriptions, but no trace of them can now be discovered; they were probably written in colours. A rich border of acanthus leaves and flowers, forms the frame of the beautiful reliefs.

The graceful arrangement of the drapery, and the masterly composition of both tablets, which is in contrast to some little inaccuracies of the execution—(thus, for instance, the left foot of Aesculapius is too much turned outwards; the "sourzo" of the thigh of Eros is incorrect; the face of the goddess less expressive than that of Aesculapius) —seems to warrant the supposition, that both reliefs are copies of some celebrated marble statues. This conjecture might likewise explain the uncommon size of the club, and of the snakes which, in the original marble groups, might have formed the artistical supports of the statues. Still, it is impossible even to guess to which temple the originals of the composition might have belonged, since the worship of the gods of health was diffused all over the ancient Græco-Roman world. Carronni, in his commentary on our Diptychon, enumerates no fewer than one hundred and ninety-eight Greek towns which, according to the ancient authors, worshipped Aesculapius and his family in temples erected to their honour,

or made their representations the types of coins. But in any case, the present composition is the most important monument of the worship of the gods of health among all we know, on account of the many attributes heaped on them. The club, resting on the head of a bull, is the symbol of Hercules, as representative of the sun; the tripod belongs to Apollo, the stephane to Juno; Cupid is the companion of Venus, and Iacchus of Ceres. In our relief, they are all connected with Aesculapius; and especially with his daughter, who is raised by them to the dignity of a great mother-goddess. This peculiarity, entirely in accordance with the workmanship of the carving, carries us down to the time of the Antonines—an epoch most important in the history of the development of religious ideas. The faith in Greek and Roman mythology had come to a crisis; and though Christianity was not yet powerful enough to threaten the religion of the state with extinction, still people began to feel that the old faith had accomplished its destinies. Worn out as it was, it could no longer bestow support to the state; on the contrary, it had to be supported by the secular power. It was in vain that the Emperors strove to impart new life to the state religion by frequent pomps and feasts, comemorating antiquated rites and customs. The priests brought, in vain, old, forgotten, and miraculous statues from the hidden recesses of the temples before the multitude, and disclosed the mysteries of worship to the uninitiated crowd. A feeling of uneasiness had caught hold of Roman society; and mythology took its course backwards to the point from which it had proceeded. Starting from the unity and ubiquity of godhead, its manifold manifestations were originally embodied in innumerable personifications; the youthful poetical spirit of Greece found always new characteristic symbols; and as godhead manifests itself in space and time, in nature and history, new myths grew up, symbolical of those manifestations, and formed in their concatenation that lasting monument of the youth and poetical productivity of the Hellenic race, which we possess in its mythology. But life soon departed from the myths when they were transferred to Rome, since the practical Romans adopted only the form, and were unable to understand and to feel the spirit, of Hellenic religion. Its poetry faded; and the rites, deprived of their symbolic meaning, debased and over-clouded the understanding by dark superstition. Accordingly, towards the end of the Republic, and under the first Emperors, the people of Rome turned easily to the still

more superstitious and immoral rites of oriental and barbarous mythology, to the bloody mysteries of Mythras, to the orgiastic processions of Cybele, to the dissolute worship of the Syrian gods, and to the Isiac ceremonies, of which the original meaning had been forgotten. Philosophical minds of an imaginative turn, the Neoplatonists, tried now to give a new basis to the old mythology; they sought to re-establish unity out of diversity; any local god became the symbol of godhead and of the creative power, and every goddess represented nature, and became the impersonation of the female principal of creation. On monuments of this period, therefore, we cannot be astonished to see the local goddess of Epidaurus and Pergamus assimilated to Venus, to Juno, and to Ceres, and leaning upon the tripod of Apollo. The beautiful pantheistic representation is sufficiently explained by the following remarkable invocation of Isis, in the Metamorphoses of Apuleius, which shows the desire of converting the popular polytheism into philosophical monotheism.

"*Queen of heaven,*" says he, "whether thou art Ceres, the beautiful, the first mother of crops; or the heavenly Venus, who in the beginning harmonised the difference of sexes by love, her offspring; or the sister of Phoebus, who, assisting travail, hast reared so many nations; or, with nocturnal wailing, the terrible Proserpine (Hecate), with her three-fold face, restraining the assaults of ghosts, and keeper of the recesses of the earth, with thy female light purifying all the walls, with damp fire nourishing the joyous seeds, and on the by-ways of the sun distributing thy uncertain light; by whatever name, by whatever rite, under whatever form, it is permitted to call thee!" &c.—And Isis replies: "Here I am, Nature, the great mother of all things; the mistress of all the elements; the first progeny of time; the sum total of names; the Queen of the deceased; the first of the heavenly host; the all-comprehensive form of gods and goddesses, ruling with my will the bright summits of heaven, the salubrious breezes of the sea, the mournful silence of the nether world,—whose godhead, which is one, is worshipped by all the world, under different forms, with various rites, aud under manifold names. The first-born Phrygians call me *the Pessinuntian mother of gods;* here the aboriginal Athenians *the Cecropian Minerva*; there the floating Cyprians *the Paphian Venus;* the archers of Crete *Dictynna;* the trilingual Sicilians *the Stygian Proserpina;* the Eleusinians *the old goddess Ceres.* Others call me Juno,

others Bellona, others Hecate, and others Rhamnusia (*Nemesis*); but the Aethiopians, who are illuminated by the first rays of the nascent sun, and the Arians, and the Egyptians, versed in ancient lore, and worshipping me altogether with peculiar ceremonies, call me by my true name, Queen Isis."

But besides this Neoplatonic explanation of the attributes cumulated upon Hygeia, and characterising the epoch of the Antonini, we find likewise some older relationship between the goddess of health and the Deities, whose symbols she usurps on our relief. The tripod of Apollo—the healing solar god—perfectly suits his granddaughter, the goddess of health. As to Cupid, he is not the god of earthly love when in company with Hygeia—but Cupid, the god of death, who carries the souls back to their original abodes. We see him in this character often on gems—sailing to the isles of the blessed upon the vase which contains the ashes of the deceased—or burning the butterfly, the symbol of soul, with his torch, to represent its purification by death. Iacchus, with the mystic basket, has the same signification; he is the mediator of earthly and heavenly ideal. The union of those gods of immortality is not altogether confined to our relief. Pausanias mentions, in the Rotunda (*Tholus*) of Aesculapius, at Epidaurus, the picture of Cupid, and of Methe, the goddess both of drunkenness and immortality; therefore, a combination analogous to our representation. Iacchus, the boy with the snake, reminds us likewise of the parallelism of Hygieia, and Kora, and Demeter; and we find, at Lebedea, the worship of Proserpine Herkyna joined to Trophonius—a group similar in form to Hygeia and Asklepios. On the coins of Parium, Demeter is represented with a snake coiling round her body: and a dolphin—symbol of Cupid—at her feet. We find the snake again in company with Minerva, who is likewise called Medical and Salutaris, being a goddess of health; and with her we see the mystical casket, hiding Erichthonius, a snake boy. As regards Juno, whose stephane adorns the head of Hygeia on our tablet, a sacred snake is worshipped in her temple at Lanuvium, fed by virgins.

Though it cannot be doubted, from the preceding instances, that a connexion of the Epidaurian goddess with all those deities, whose symbols are given to her in our Diptych, was known through all periods of Greek mythology, still the simultaneous union of so many attributes belongs exclusively to that period when Neoplatonism tried to steal the thunder of Christianity, transforming polytheism into monotheistic philosophy, and

explaining the countless myths in a rational way. Though these endeavours did not succeed, still they deeply impressed the mind of the educated classes, and prepared the ultimate triumph of Christianity. We find in every Museum many pantheistic idols, upon which the attributes of several gods are heaped; they are evidences of the influence of Neoplatonism on art; but the most important, and by far the most beautiful, monuments of this period are the ivory tablets which we have tried to explain.

The second Ivory is of the Byzantine period, a Consular Diptychon of Flavius Clementinus, Consul A.D. 513, published first by its proprietor, Gustavus Philippus Negelinus, then by Gori, Vol. I., Tab. ix. x.; and again, by D'Agincourt, Storia dell Arte, Vol. II., pl. xii. fig. 7, 8. The inside of the Diptychon is not less interesting than the reliefs, for an important inscription, which contains the Greek liturgy of the eighth century, runs across both tablets, with the following incorrect orthography. See the fac-simile on the opposite page.

The precise date of this inscription is sufficiently fixed by the mention of the first year of Hadrian, Patriarch of the city, who cannot be any but the Roman Patriarch, or Pope Hadrian I., since among all the Patriarchs of Constantinople, Alexandria, Antiochia, and Jerusalem, there occurs no Hadrian; and the word πολις (city), without any further designation, was applied only to the two great metropoles—Rome and Constantinople. The first year of Pope Hadrian's office commenced with the 9th of February, A.D. 772. It was therefore in that year that the Diptychon of Consul Clementinus was inscribed with the liturgy and short prayer for the Patriarch, for the priest John, and for Andrew Machera, probably the donor of the tablets to some church of Sicily, where the Greek language prevailed at that time, though the Sicilians were attached to the Roman Patriarch. The mention of St. Agatha, the patron saint of Palermo, points likewise to Sicily.

We are not to be astonished at seeing the memorial of a Consular inauguration inscribed with a Christian prayer; since Alcuinus, speaking of the Mass, de Divin. Offic., makes the following mention of Diptychs: "After those words, when it is said, '*in the sleep of peace,*' it was the custom of the ancients, as it is done until now in the Roman Church, to recite the names of the deceased *from the Diptychs.*"

ΣΤΟΜΕΝ·
ΣΤΟΜΕΝ
ΣΤΟΜΕΝ
ΠΡΟΣΧΟΜΕΝ
ΕΝΙΡ ΙΝΗΤΩ
ΕΛΕΩΣ

ΘΥΣΙΑ
ΗΑΓΑΠΙΤΟΥ
ΚΑΙΗΧΑΡΙΣ
ΚΑΙΣΡΣ ΗΜΩΝ
ΕΦΗΜΑΣΤΕΤΙ
ΑΔΡΙΑΝΟΥΠΑΤΡΙΑΡΧΟΥ
ΜΗΝΣΘΗΤΙΚΕ
ΣΟΥ·ΙΩΑΝΝΟΥ
ΠΡΕΣΒΥΤΕΡΟΥ
ΓΙΑΣΑΓΑΘΗΣ

ΑΜΗΝΗΣΘΗΤΙΚΕΤΟΥΔΟΥ

ΚΑΛΟΣ
ΕΥΛΑΒΟΣ
ΜΕΤΑΦΟΒΟΥ

ΤΙΑΓΙΑΑΝΑΦΟΡΑ
ΘΩΙΠΡΟΣΦΕΡΕΙΝ
ΕΙΡΙΝΗ
ΑΙΝΕΣΕΩΣ
ΚΑΙΙΗΣ
ΤΟΥΚΥΚΑΙΘΥ
ΙΥ ΧΥ
ΑΜΗΝ
ΤΟΥΔΟΥΛΟΥ

ΕΛΔΧΙΣΤΟΥ
ΜΟΝΗΣΤΗΣΑ
ΑΜΗΝ

ΛΟΥΣΟΥΑΝΔΡΕΟΥΜΑ
ΧΕΡΑ ΧΙΑΓΙΑΔΟ
ΑΜΗΝΗΣΙΣΚΕ
ΤΟΥΔΟΥ
ΙΩΑΝ
ΑΜΑΥ
ΠΡΑ

Viewing the inscription from the palaeographical and philological point of view, we find a considerable corruption of the language and orthography, —indicating that the confusion of η, ι, υ, ει, οι, into the single sound of *Iota*, had already become common. So, also, ο and ω are confounded, as by the modern Greeks. The form of the A M Δ approaches the current Greek letters; the η is used for the ι,* and *vice versa*,† the υ for οι,‡ and the ο supersedes often the ω.‖

As to the meaning of the inscription, it is the following :—

"LET US STAND WELL, LET US STAND WITH REVERENCE, LET US STAND WITH FEAR, LET US ATTEND TO THE SACRED OBLATION, IN PEACE TO OFFER TO GOD. THE MERCY, THE PEACE, THE SACRIFICE OF PRAISE, AND THE LOVE OF GOD AND FATHER, AND THE GRACE OF OUR LORD AND GOD AND SAVIOUR JESUS CHRIST, BE UPON US. AMEN. IN THE FIRST YEAR OF HADRIAN, PATRIARCH OF THE CITY. REMEMBER, O LORD, THY SERVANT JOHN, THE LEAST PRESBYTER OF THE DWELLING OF HOLY AGATHA. AMEN. REMEMBER, O LORD, THY SERVANT ANDREW MACHERA. SAINT AGATHA, HOLY MOTHER OF GOD. REMEMBER, O LORD, THY SERVANT AND OUR SHEPHERD, HADRIAN, THE PATRIARCH. REMEMBER, O LORD, THY SERVANT JOHN, THE SINNER, THE PRESBYTER."

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* χαρης for χαρις. † ιρινη, τι, ι, αγαπι, ετι, for ειρηνη, τη, ῆ, αγαπη, ετει.

‡ πυμενος for ποιμενος.

‖ στομεν, καλος, ευλαβος, for στωμεν, καλως, ευλαβως; but likewise θεωτωκος for θεοτοκος, προςχομεν for προςεχωμεν.

PROCEEDINGS.

NINTH SESSION, 1856-57.

ANNUAL GENERAL MEETING.

St. George's Hall, 18th October, 1856.

SAMUEL GATH, ESQ., in the Chair.

The minutes of the last meeting were regarded as read, and were confirmed and signed.

The Honorary Secretary read the following

REPORT:

At the close of the eighth year of the operations of this Society, the retiring Council have the gratification to report its continued progress; in internal resources, in external usefulness, and also, as they believe, in public esteem. It has already adapted itself so well to the new constitution of 1854, and its mode of procedure is so well known, that they believe their successors in office will be called upon rather to strengthen and complete the framework which exists, than to originate anything new.

Experience enables them to suggest two points on which greater completeness might be given to the present system. One is the Intellectual Inquiries of the Society, which might be reduced to order in some detail as well as in the general principles, so as to secure the best papers on subjects of interest, without any important division being too long overlooked. The other is a more specific arrangement of Finances, so that each class of receipts shall in general be applied to a distinct purpose, and each class of payments be regulated by the general income, so as to make the Society at once more efficient, and perpetually self-supporting.

In the month of August, the annual volume was issued to the members. It contains more than 300 printed pages, and is illustrated by sixteen plates, four of them being of unusually large size. It may be regarded as a fair sample of what the members may expect to be furnished with during the future years of their connexion with the Society. Each of the previous volumes is enriched by special donations of illustrations, and the present constitutes no exception to this interesting rule. Besides three plates contributed by members, five of the most costly in production together with tabular printed matter, had been prepared for the annual volume of a sister society, whose officers generously placed them at our disposal.

At the close of the seventh session, the number of members of all kinds was 444; at the close of the eighth it is 458. The following is a detailed analysis of them:—Life Members, 36; Resident Annual, 240; Non-resident do., 147; Ex-officio, 3; Lady Associates, 4; Honorary Members, 28. At the commencement of the first session the number of ordinary members was 217; there has therefore been, during eight years, an average increase of 27 per session.

During the past session a room has been rented, and suitably furnished, at No. 57, Ranelagh Street, and the Society's Library, Museum, and miscellaneous property, have been deposited in it. A Catalogue of the whole is in type; and the Council have the

gratification of announcing that the collection will be available to the members from the commencement of the ordinary meetings. As the extent and character of the collection change rapidly—partly from purchase and exchange, but chiefly from donations—only a limited number of copies of the catalogue will be printed, to be forwarded to those members who formally ask for it. With the view of adding to its present usefulness, the donations which have been received since the close of the meetings in May will be added, though they have not yet been formally laid before the Society.

It appears from the Treasurer's balance sheet, that the entire expenditure for the purposes of the past session (including the publication and issue of the volume) has amounted to £286 15s. By means of the annual subscriptions alone, the whole of this sum has been discharged, and a balance left of £25 1s. 6d. If to this we add entrance fees, compositions for life-membership, and the price of volumes sold, the receipts during the session exceed the mere sessional expenditure by £96 18s. 8d. Part of this sum has been employed in increasing the furniture and stock, and part in discharging both sessional and permanent liabilities incurred last session; yet a balance still remains in the hands of the Treasurer of £39 11s.

During the past session, one of the miscellaneous evenings was made more generally interesting by the Society procuring a larger meeting room than usual, and inviting the attendance of lady visitors. The order of business was followed as usual, but the paper selected for the occasion was one of great interest, either for a learned or a popular audience. The general result was so satisfactory that the Council recommend to their successors the practice of holding one such extended general meeting in the course of each session.

On the 24th of June, an excursion to Preston was undertaken, a brief account of which is given in an appendix to the volume. The kind and hospitable reception which the Society received from its members and other friends in that locality, including the Mayor, deserves a special and grateful mention. This, and the general results of the day's investigation, suggest that a similar excursion might be made annually, to some point of interest within the two counties, after the close of the sessional meetings. Opportunities for local investigation will also be afforded by the Congress of the Archæological Institute of Great Britain and Ireland, which will meet in Chester in the summer of next year. The members of this Society will rejoice to co-operate with fellow-labourers within their local limits; and to offer to them, when they visit Liverpool, such cordial welcome as they have gladly shown to other and similar societies.

The gentleman who was appointed Assistant Secretary at the commencement of last session, has felt it necessary to retire from the duties, owing chiefly to the state of his health; and the Council, after giving great attention to the subject, have appointed Mr. W. W. Rundell as his successor. Mr. Rundell occupied a similar position for ten years in Cornwall, with great credit to himself, and advantage to the society with which he was connected; and more recently he has become known to the public of Liverpool as the able and earnest secretary of the Compass Committee.

During the present year the Society has lost the usual per centage of members, by death, resignation, and change of residence. Among these was one of the members of Council, the late Thomas Moore, Esq., an original member of the Society. His family had been connected with Liverpool for several centuries, and he was himself deeply interested in historical and antiquarian pursuits. The Council have resolved to diminish the apparent number of members still farther, by putting into force law xii, for the formal ejection of two or three gentlemen who are largely in arrear to the Society.

The gentlemen who have been selected as suitable successors to those who retire, have all had experience either in the Council or on Committees; and they are all prepared to discharge the duties, the performance of which you may entrust to them.

It was then moved by Dr. Macintyre, seconded by Peter R. M'Quie, Esq., and resolved unanimously:—

That the Report now read be adopted, and printed and circulated with the Proceedings of the Society.

The following statement of accounts by the Treasurer having been read, it was moved by JOHN POOLE, Esq., seconded by T. SANSOM, Esq., and resolved unanimously:—

That the Treasurer's statement of accounts be passed, and printed and circulated with the Proceedings of the Society.

THE HISTORIC SOCIETY OF LANCASHIRE AND CHESHIRE, *in Account with* THOMAS AVISON, *Treasurer*.

Dr.

		£	s.	d.
To Balance due to Treasurer		12	10	11
THE VOLUMES:—				
Binding part of vol. vii...	2 14 0			
Mr. Fairholt, engraving mask for do.	2 0 0			
Distributing vol. vii.....	3 18 6	8	12	6
T. Brakell, printing and binding vol. viii.....123	0 0			
Taylor and Francis, London, printing tables for Mr. Hartnup's paper ..	12 17 0			
W. J. Hammond, lithographing	13 16 0			
Distributing	4 16 3	154	9	3
SESSIONAL EXPENSES:—				
Printing circulars, prospectuses, &c.	7 14 6			
Postages of do., and miscellaneous	9 17 1			
Tea, Coffee, and attendance at meetings	11 8 6			
Use of St. George's Hall..	15 15 0			
Advertising.....	4 1 6			
Assistant Secretary	50 0 0			
Rent, taxes, and gas for rooms	6 16 9			
Collector and Accountant	12 9 8			
Circulars, &c., previous to annual meeting	1 10 6			
Insurance, cleaning, messages, parcels, cab hire, and miscellaneous	12 12 3	132	5	9
PERMANENT CHARGES:—				
Books bought.....	6 18 0			
Furniture and stock.....	15 14 8			
Stationery and printing ..	8 10 6			
Fitting up cases, &c., at rooms	5 1 1	36	4	3
		344	2	8
Balance to credit, exclusive of arrears and volumes in stock		39	11	0
		£383	13	8

Cr.

	£	s.	d.
By Gross Receipts in Session viii, viz:—			
Subscriptions in arrear	46	4	0
Entrance fees for Session viii ..	27	6	0
Annual subscriptions	265	12	6
Life subscriptions	26	5	0
Books sold	18	6	2
	£383	13	8

Examined by

PETER R. M'QUIE, SAMUEL GATH, } Auditors.

(E.E.)

Liverpool, 18th October, 1856.

THOMAS AVISON.

The Honorary Secretary then read a Paper, of which the following is an abstract.

FINANCIAL POSITION OF THE SOCIETY.

The second paragraph of the Annual Report, contains two suggestions, both of which are important. The following remarks apply to only one of them.

It must be obvious to the most superficial observer, that the payments which have to be made on behalf of a Society like this are of two kinds, namely—I. *Annual* Expenses, such as printing, working, refreshments, rents, postages; and II. *Occasional* Expenses, for furniture, fittings, repairs, books, objects, &c. In like manner the receipts of the society consist of I. *Annual* Subscriptions (guineas or half-guineas as the case may be,) and II. *Single* payments made by members as entrance fees, compositions for life-membership, and payments for volumes sold.

It will also be apparent on reflection that there is an intimate relation between the two classes of items on the one side, and the two on the other. The *Annual Subscriptions*, for example, stand opposite to the *Annual Expenses*, and those payments, which are made once only, should cover occasional outlay for purposes of a more permanent kind. It is impossible to ascertain the true condition of a society without keeping these classes of items distinct, either on paper or in the mind. On the one hand, a society which is retrograding may appear to progress, by using life compositions and other occasional receipts as if they were annual subscriptions, or by postponing the payment of accounts; and on the other, a society which is progressing may appear to retrograde, by making a large outlay on its permanent collection, or by investing a portion of the funds in a way which will make a certain but slow return. In general, when the ordinary annual receipts meet the ordinary annual expenditure the society is self-supporting; for if the occasional receipts be small, the outlay in furniture, books, and objects can be diminished accordingly. Of course the scale of public usefulness may be high or low, or may be elevated or depressed; I am now merely assuming that it is uniform. If the sessional income exceed the sessional expenditure there is an annual gain, which may be either applied to the increase of the stock, or reserved for future contingencies; and if at the same time the single payments are in excess of the occasional outlay, the society is flourishing financially, in both of its great departments.

Let us now apply these general principles to our own society, and see what is our actual condition. The annual subscriptions merely, during the past year, have amounted to £311 16s. 6d., and the annual expenses to £286 15s. 0d., leaving a balance to the credit of the society under that head. The single payments to the society have amounted to £71 17s. 2d., and the occasional expenses on property and stock to £57 7s. 8d., so that there is a balance to the credit of the Society under this head also. It is evident, therefore, that the Historic Society is at this moment thoroughly self-supporting; and we have a reasonable hope that the future will increase largely its means of usefulness both to the public and to its own members.

It should be borne in mind that this Society is bound by its Laws to print annually; and that it furnishes at present a respectable volume, illustrated, to each of its members. The Society is also bound to make other Annual payments, some of which may be diminished in future sessions, or entirely removed. The Volume for the past session has cost the Society £154, independent of donations of Plates; and the general expenses have amounted to £131. Hence, to accomplish the same results annually, without calculating on extraneous aid, will require an expenditure of about 300 guineas a year. This of course does not include casual payments for permanent purposes, or for contingencies.

The Society has risen regularly from 217 Members in October, 1848, to 430 in October, 1857. The sessional loss from various causes, amounts to about five per cent., [some Societies have changed to the extent of eleven or twelve per cent. per annum,] so that to maintain that number undiminished, at least 22 should* be enrolled each session. Any larger number will tend to increase the Society.

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* The actual number enrolled in Session 1855-56 was twenty-nine, and in 1856-57, sixty-three.—*Ed.*

It has often been said that a Learned Society in so large a town as Liverpool, if even moderately well worked, should never allow its members to fall below 500. If the proportions of the various classes of members were nearly the same as at present this would give an annual income* of nearly £450, or almost fifty per cent. above the sum at present necessary for the successful working of the Society. In 1844, the principal Learned Society of the town had only 90 members, and an annual income of about £50.

But it may be asked, how has the Society reached its present position if it be impossible to conduct it on less than an income of £300 a-year? So recently as the close of the sixth session its receipts did not reach that sum, even with the appropriation of life compositions. The reply to this inquiry is very simple. The Society, though continuous in existence, has occupied two distinct positions before the public. At first it gave attention to archæology, and to a limited extent to literature. It supplied the absence of one sectional subject in the town, and trusted to existing societies to supply the rest. It now undertakes to supply all, on a scale not hitherto attempted. It is in these latter circumstances that this enlarged expenditure becomes indispensable. In its earlier years, it was made self-supporting by peculiar management. Its meetings were few in number, and the working expenses were small, both in their entire amount and their relation to the income. The life subscriptions were not numerous, and they were used with the annual income, which might be regarded either as borrowing from the future, or as an equivalent for the additional volumes in stock, for sale to future members. But, besides all this, the working of the Society was gratuitous, and we received annually liberal donations in money, and professional services, for the illustration of our volumes. To adopt the language of business life, a few gentlemen gave the society a bonus annually, which, with economical working, kept the shares always up. The necessity for these sacrifices has now passed away, and the Society, even with its large undertaking, is able to settle every claim liberally and promptly. Yet we have strong reason to believe that, from the kindness of friends and the interest which individual members are likely to feel in particular subjects, such donations will not cease, but on the contrary, be frequent, and be highly appreciated as before.

Let us view the working of the Society a little more in detail. It may be stated broadly that each of our members pays the original smaller subscription for the production of the annual volume, but that our resident members pay another such sum to cover working expenses. Now, it is curious to see the relation which the two sums bear to each other in point of fact. We have 240 resident annual members, who on this principle contribute 120 guineas, or £126 a-year, for working expenses. If we deduct from the present balance sheet one or two petty items not necessarily sessional, this sum exactly meets the whole of the charges under the head of "sessional expenses." If the Society had reached 500 members, the sum available would be £144 7s. 6d.; and it is very improbable that under any circumstances, so large a sum would be required.

At the present moment, we have 36 Life Members on the roll, so that we ought to be able to show property purchased and cash to the extent of £189. All this and more can be done; yet I am one of those who wish to see the whole of the life compositions

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* 35	Life Members at	£5 5 =	£183 15 0		
5	" "	10 10 =	52 10 0		
			£236 5 0	Interest	£9 10 0
275	Resident Annual Members				288 15 0
177	Non-Resident Annual Members				93 1 0
3	Ex-officio Members				0 0 0
5	Lady Associates				2 12 6
500	Annual Receipts				393 18 6
	Casual Receipts:—				
	Entrance Fees, say	£31 10 0			
	Books sold, say	20 0 0			
					51 10 0
					£445 8 6

bearing interest, and the permanent charges met from some of the other sources of income. It should be borne in mind that life compositions are available eventually, but not immediately; as they drop in at the termination of the lives. With a little economy and effort on the part of the council, a sum equivalent to the payments of all the surviving life members might be invested in two or three sessions, the other sums being appropriated to distinct objects. This would fully meet the suggestion in the report with which I set out, and would greatly simplify the duties of every succeeding treasurer, secretary, or member of council. The property which we have created would then exhibit an independent existence, and be attributable to individual generosity and good working alone.

It will easily be gathered from this that our society has now reached a point financially which it never reached before; and that its promise of future usefulness is greater than on any previous occasion. We have prospered and progressed when we had but few advantages to offer: it is not reasonable to suppose that our prosperity will cease when we have more to offer. The heavy up-hill strain which has continued without one moment's intermission for eight years is at an end, and the Society now requires only judicious guidance on a level road. Its intellectual resources have more than kept pace with its pecuniary ones; for as a scientific Society it knew no infancy, but sprang to maturity in a single session.

One of the destinies of the Society has not yet been accomplished, or only partially and indirectly. It is obvious that in creating an intellectual community in the midst of a more material one we ought to benefit not only our own members, but also, as far as possible, the public at large. With a pressure nearer at home, we have hitherto rarely looked outward; but it is surely time to do so. Everywhere around us, and especially in this town, we see those who yearn after the good and the beautiful, continually thwarting their own noble purposes by the incompetency which characterises them through life. And if it be so with them, what must it be with others still lower in mental elevation, however they may sit in high places; who regard man only as an animal machine, and the supply of his bodily wants as the sole business of life? I believe that it is not only allowable, but requisite, to instruct and guide our local public from time to time on subjects with which we possess unusual familiarity and thus to multiply the means of doing good. And I am not without a conviction that such services as we could thus render would be gratefully received.

It was moved by the Rev. T. Moore, seconded by William Burke, Esq., and resolved:—

> That the thanks of the Society be given to Dr. Hume for his interesting paper.

It was moved by G. M. Browne, Esq., seconded by J. Hughes, Esq., and resolved,—

> That the thanks of the Society be given to the officers and sectional members of Council, for their services during the past Session.

It was moved by Dr. Hume, seconded by T. Sansom, Esq., and resolved,—

> That the thanks of the Society be given to the British Association for the Advancement of Science, to John F. Marsh, Esq., and to the Rev. John James Moss, for their valuable contributions of illustrations to vol. viii. of the Society's Proceedings.

A ballot having been taken for the Officers and Sectional Members of Council, the following was the result as announced from the chair. (See page vi.)

Thanks were then conveyed to the chairman by acclamation, for his services during the evening, on the motion of Dr. Hume, seconded by John Poole, Esq.

6th November, 1856. MISCELLANEOUS MEETING.

J. T. Danson, Esq., V.P., in the Chair.

The Right Reverend the Lord Bishop of Sodor and Man was proposed as a member of the Society, and being ballotted for at the same time, in accordance with a Bye-Law, was declared duly elected.

Certificates of nine candidates, for election as members, were read for the first time. The Secretary explained that there was a much larger number of candidate members to be proposed, but it was not thought desirable to delay the general business of the evening, on any one occasion, by submiting a larger number to the ballot.

The following donations were laid upon the table:—

From Gilbert James French, Esq., Bolton. A beautiful guidon of silk, four yards long, for the Society itself. It contains the name of the Society, and the arms and badges of the two counties.

From Henry Kingsmill, Esq., Hong Kong. A Chinese Gong. The Snout of a Sword Fish. The skull of an Albatross.

From G. M. Browne, Esq. Syers' History of Everton, 1830.

From Peter R. M'Quie, Esq. Adams' Weekly Courant, 30th May, 1739. The Lancashire Omnibus, 5th April, 1832. A Norwich Play Bill, 13th May, 1799.

From Joseph Mayer, Esq., F.S.A. The Official and Illustrated Guide to the London and North Western Railway, by George Measom.

From the Author. British Antiquities, their present treatment, and their local claims, by H. H. Rhind, Esq., F.S.A.

From the Author. Suggestions for a medal to record the discovery of the passage to the North Pole; by Richard Sainthill, Esq., Cork. Also further suggestions by the same, dated 22nd March, 1850.

From Mrs. Ann Maria Heaton, Edge Hill. Copper Calendar, 1782. Commemorative medals—Roscoe, Brougham. Copper political tokens—Prince Regent, 1789, C. J. Fox. Seven half-penny tokens of last century, (Manchester, Rochdale, Lancaster, Macclesfield.) Six do., (Sheffield, Anglesea, Carmarthen, &c.) Various tokens—Birmingham, Banbury, Notts, Salop, Staffordshire, &c. (The farthing with effigy of Howard on the reverse.) Sundry Hibernian and Colonial copper coins, United States cents, &c., &c. Small Persian coin. Two Russian coins.

From Richard A. Tudor, Esq. A "Tyburn Ticket," signed by Sir Nash Grose, Kt., exempting Richard Foulkes from all parish and ward offices within the parish of Sallatin, Salop, for apprehending and prosecuting a felon. Dated 25th March, 1794.

From the Author. Some observations on an ancient Talisman, brought from Syria and supposed to be the work of the Chaldeans. By John Lindsay, Esq., Cork.

The Chairman handed the Banner to Mr. Mayer, as a liberal contributor, and one of the founders of the Society, to unfurl it for the first time.

It was moved by Dr. Hume, seconded by Henry Dawson, Esq., and resolved:—

That the cordial and special thanks of the Society be given to Mr. French for his interesting donation.

It was announced that the various books which had been presented to the Society during the recess, would be classified and laid before the members on the evenings of meeting appropriated to the sectional subjects to which they severally related.

Mr. James Boardman forwarded for exhibition a letter written by John Wesley, of date January, 1789, addressed to Mrs. Wagner, wife of Mr. B. P. Wagner, merchant of

Liverpool. Some portions of the letter could not be deciphered without difficulty. Wesley at this time was in his eighty-eighth year.*

Dr. Hume exhibited a "Sessions' judgment," in a dispute as to some land at Moreton, in Wirrall. It was dated 21st September, in 26th of Elizabeth.

Mr. Buxton exhibited a Sicilian Dollar of 1843, on which the objectionable words "Olim Bomba" were impressed; the former above, and the latter on the figure of Ferdinand. Also a silver coin of the short lived Roman Republic of 1848.

The Secretary read a communication from the Town Clerk, dated 31st October, stating that the Town Council had granted to the Society the use of the Grand Jury Room for its meetings, and of an adjoining room for refreshments, except during the period of assizes and sessions.

It was moved by JOSEPH MAYER, Esq., seconded by PETER R. M'QUIE, Esq., and resolved:—

> That the thanks of this Society be given to the Town Council for their compliance in this matter.

The Secretary was authorized to communicate that the privilege of attending the meetings of the Society was granted to the Treasurer of the Literary and Philosophical Society of Liverpool, in return for a similar arrangement announced by the Secretary of that Society.

A copy of the new Catalogue of the Library and Museum, still in galley slips, was laid upon the table.

The attention of members was drawn to a list of diplomas yet unclaimed by the gentlemen to whom they severally belong.

The following paper was then read:—

OPENING ADDRESS. *By J. Towne Danson, Esq., F.S.S., V.P., &c., &c.*

We now open the Ninth Session of the Historic Society of Lancashire and Cheshire. We approach this renewal of our meetings, and of our labors in common, with increased numbers, with enlarged individual experience, and with clearer conceptions alike of our objects, and of the means by which they may be worthily attained.

United by the bond of a common duty—that of advancing, during our own time, and to the extent of our power, the learning of our own locality—we have before us as noble a task as ever exercised the faculties of civilized man. Not yet can we expect to comprehend all that is required for the fulfilment of such a task. Much of it lies in the yet undiscerned future. But much also is open to view, and nothing more so than that each session, as we return to it, we are called upon not merely to continue, but to extend our past efforts. Our onward course admits of no medium between progress and decline. Nor is it desirable that it should. What we do is not for ourselves alone. Else were it little worthy of the time and labour we bestow upon it. We rejoice to feel that it shares, in some sort, the significance and the value due to every earnest endeavour of mankind to increase and disseminate knowledge; and that it shares, too, the same onward impulse. Our prosperity assures us that, limited and imperfect as our operations have hitherto been, they have supplied a real and a growing want. Also it assures us that if we would secure a success thus dependent upon surrounding cir-

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* Near London, January, 1789.

My dear Mrs. Wagner,

You send me very welcome news respecting your two daughters. I hope they will not be content with an outward change, but will give God their hearts. It avails nothing to be almost Christians. Let them be Christians altogether, enjoying all the mind that was in Christ, and in all walking as Christ walked. With regard to the great man, [George III.] there is no possibility of access to him, he is so entirely hedged in with physicians, otherwise I believe I myself could cure him. The will of the Lord be done.

If it should please God that I live till March, I shall hope to wait upon you at North Hall.

Peace be with all your spirits. Peace, dear, dear, Spirits!

I am, my dear Mrs. Wagner,

Your very affectionate servant,

J. WESLEY.

cumstances, we must, in no degree, neglect that progressive improvement of method and elevation of purpose which, more than aught else, so honorably distinguish the age in which we live.

To us, indeed, unimpeded by obstacles that beset the paths of most other public bodies, with no vulgar inducements to obstruct, and many noble incentives to promote the adoption, in every case, of the course most consonant to the loftiest intelligence,—to us, I say, it would seem not improperly to belong, by such means as our humble powers may afford, to preserve, to promote, and if possible to make more prevalent, these most promising characteristics of the public action of our time.

And peculiarly fit does it seem, that when assembled on an occasion like the present, we should, with somewhat more than accustomed vigilance, scan the drift of our proceedings, and mark, each for himself, its relation to those great outlines of our collective duty, a close regard to which constitutes the best security for our continued well-doing, and our only valid title to the prominent place we have assumed among our fellow citizens.

To associations more even than to individuals is such occasional self-examination needful. The best practicable union falls short of unity. As a body we must always lack the safe-guard of self-consciousness. Our sense of duty, however clearly defined the duty itself may be, must, when compared with that of an individual man, be more or less vague and imperfect. What should equally concern many, is apt sufficiently to concern none. And thus in the absence of special excitement, or an occasional revival of the sense of duty, our energy tends to wane, our aspirations and hopes of the future to fade into indifference, and our powers to fall more or less under the insidious despotism of routine.

To no better purpose, then, does it seem to me that I can use the opportunity afforded by the request of your Council, that I would address you at this, the first meeting of the Session, than to call to our remembrance the high purposes for which we are associated, and by what means we can best, in the immediate future, seek their accomplishment.

And who amongst us, standing aside from the current occupation of the hour, can regard the position we now occupy as a Society and not feel his soul uplifted before the magnitude of the duties we may make ours, and the amplitude of the means tempting us to their fulfilment. In part this position has been won by our own exertions. In part we owe it to circumstances. Need I add that the grateful pride its contemplation inspires, assumes that our aims are worthy of the vantage ground it affords; that its true value lies in the opportunity it offers for future well doing.

Our aims have more than once been ably and clearly defined. Though primarily local, they are—under the changes recently effected in the structure and working of the Society—adapted to as wide a field of action as, while we own any local ties whatever, we can profitably occupy. Nor, wide as is the work before us, and well adapted as our arrangements now are for compassing its utmost bounds, are the external facilities awaiting its performance in any degree less ample. In all these respects we are fortunate. In all of them is the lot that has cast us upon this time and place a happy one. In an age distinguished from all former ages by the predominance of the commercial tendency, we find ourselves placed exactly where this tendency has received its highest developement. The manufacturing district of Manchester, and the port of Liverpool, taken together, form, at this moment, the most remarkable and most progressive, if not in every respect the most important centre of the commercial activity of the world. Nowhere else is so fully revealed, so obvious to the contemplation of man, the exquisite wisdom of the arrangement which has made commerce the overpowering and universal instrument of material civilization—a mean whereby the primary necessities of our nature are made at once subservient to the diffusion of knowledge, and powerfully suggestive of the natural brotherhood and mutual dependance of mankind. Fit scene to direct enlightened curiosity to the almost infinite variety of human activity, so multifarious in direction and result; and irresistibly suggestive of speculation on the ultimate destiny of a race whose progress is now made by steps so gigantic, that the hopeful dreams of one generation become the familiar realities of the next. Fit also to

remind us that great advantages have ever their counterpoise; and that those who would achieve great ends, must not hope to avail themselves of easy and unincumbered methods.

We can hardly look long upon this scene, and fail to learn that all human action in the presence of great events is subject to collateral influences of commensurate power, the full scope of which, in our time, we may in vain endeavour to comprehend, but of which it behoves us never to be forgetful. The astonishing progress—rapid beyond all precedent during the last half century—of which our own district has afforded the most eminent example, has been achieved only by a mental devotion to the purposes of the hour which, well as it is said to befit our English character, and tempting as are its material fruits, it would ill become our Society to aid in fostering.

And here we encounter one of the most delicate, and not the least difficult, of our duties: that of watchfully regarding, and, while willingly using, never slavishly submitting ourselves to, the ruling ideas of our time. Germs, these, capable of infinite expansion—insinuating themselves wherever may be found the requisite facilities for their growth; and always directing, more or less exclusively, the tendencies not merely of science, literature, and art, but those of politics, legislation, and history itself. Ideas rule. Facts not constituting science, furnishing but the data on which it rests, the superstructure can be raised only under prior conceptions of the general principles to which the facts are to be referred. These conceptions are necessarily the offspring of the philosophical ideas of the time. Literature and art, scarcely less dependent on a trained exercise of the observing faculties, but less rigidly bound by logical inference to the observed facts, still more freely follow the track of the reigning philosophy. National policy and legislation, too, whether determined by despotic or by popular modes of government, are equally swayed by the same influences. And history, best performing its office when most truly embodying the spirit of passing events, is, when drawn from contemporary sources, unavoidably permeated, and too often delusively coloured, by the leading philosophical dogmas of the age.

The widely varied character of the topics we are in the habit of treating, though it may make less marked the effect of particular doctrines on the course of our proceedings, also brings us more effectually, even because less palpably, within the range of the peculiar philosophical tendencies of the time; of those which, as they are more or less vividly impressed upon all cultivated minds, need seldom be distinctly expressed. And without canvassing, in the remotest degree, the comparative merits of prevailing systems, or hazarding a single remark that might be deemed depreciatory of any, I may affirm, what is indeed too obvious, that the close attention so generally given during the last eighty or ninety years, by the leading nations of the world, to the physical sciences, and to the physical well-being of man, has impressed upon the mental and moral training of the existing generation a leaning towards materialism, and an inaptitude to appreciate the more abstract and recondite conceptions upon which the physical laws themselves ultimately repose, by no means favorable to an equable and unbiassed extension, in these days, of the yet narrow circle of our knowledge; and which, receiving, as it very probably does, undue encouragement from the daily avocations of a manufacturing and mercantile life, we may justly deem it our duty, on behalf of a less partial standard of truth, rather to criticise or to oppose than implicitly to follow. Unless I am greatly mistaken, it is especially incumbent upon us, here and now, to seek and steadily to adhere to a sound mean between the popular empiricism, which moves only within the limited range of sensation, and the lofty idealism, owning no bounds, which would discard the method of induction for one of mere hypothesis. And even in so doing to remember the bias we inherit from a prior age, and share in this and to lean, if lean we must, rather against than towards that bias.

A pregnant instance of the need for such caution is at hand in the utilitarian bent of the particular community of which we form part. While it is neither possible nor desirable that we should ignore the special value possessed by knowledge applicable to purposes of immediate utility, it would still less become us to overlook the mental degradation, the dwarfing and crippling of the faculties, which surely awaits a too exclusive attention to such knowledge. True it is that all learning derives its value

from the prospect of a practical application, whether this be near or distant. True, also, that direct and immediate utility is the most certain test of the reality of all our acquirements. But no less is it true, that were the boundaries of our knowledge enlarged only under the influence of considerations so limited, not only would utility itself be, in the end, but poorly served, but we should be deprived, in great part, of the highest and best result of the pursuit of knowledge; that systematic and expansive developement of the mental faculties which, to so large an extent, marks our elevation in the scale of being, and determines our ability to contemplate, with due breadth of view, and in a fitting spirit, the ways of the Deity, as revealed in his works. And though no authoritative definition of the functions of a Society like ours yet exists in our literature to warrant the assertion, I will venture to affirm that in no efforts we may make to form or to mature an effective public opinion in favour of a liberal and equable pursuit of all sound knowledge, without reference to the probability of its yielding an immediate and mercantile profit, shall we in any degree overstep the most rigidly correct outline of our duties as a Society. Nay, I am even disposed to think that if our operations have to the community any value worthy of especial note, it is to be looked for here—to be found in the tendency they have to withdraw some of its more active minds from close and constant contemplation of particular parts and details of the mighty system around us, and to fix them at times, and for a while, through the medium of knowledge not commonly deemed useful, on the less apparent and more general laws underlying and connecting these, and thence, with expanded views, on the system itself, and finally upon the infinite majesty of its Author.

With means so large within our grasp comes, of course, a commensurate responsibility for their use. Confronting and comprehending opportunities so great, we realize one of those crises in human existence the issue of which determines our fitness for the place we fill. That the work now before us is to be done admits not of reasonable doubt. As little can it be doubted that we who have found, and put our hands to, can also accomplish it. We have but to raise our conceptions to the level of what lies before us—to be worthy of the part we have ourselves chosen—to find awaiting our use ample facility for shewing once more in England what may be done by even a few men earnestly and intelligently bent upon the furtherance of a noble design, conceived, and capable of being executed, in accordance with the spirit of the time.

There are, and we know there are, conditions of the success we crave. We know that they must be complied with. The prize is for the winner, not for the wisher merely. We are beset with temptations to error. And vast as are the advantages we possess, we have yet much to do ere we learn how best to use them.

Above and before all, we have to guard ourselves against the assumption—fatal to many who have indulged, and justly indulged, hopes quite as bright as ours—that whilst our labours are continued in form, they are also continued with effect. The principle of association is now so familiar to us, as a means of achieving with ease results beyond the utmost efforts of individual men, that a corresponding effect is commonly looked for wherever we see that principle in action. Especially deceptive is this tendency as applied to literary and scientific societies. Whence, for the most part, a too easy and too early satisfaction with what is done. Their meetings are made agreeable by the mutual good-will with which men of business assemble to relieve the mind of its daily load of care. Those who take upon themselves to provide for the instruction or amusement of the rest, are met with a feeling of gratitude at once natural and laudable. Compliments, for the most part, take the place of criticism. And, excepting the provision of a passing recreation for minds of a certain degree of culture, little is effected—very little that endures, or by which it might be known that such associations had existed. To suppose that we can entirely avoid an error so common, were to be too sanguine. But having once recognized the liability, we can at least be on our guard against its commoner indications.

Nor can it safely be inferred that because power is present, and is applied, it is also well directed. In many ways it may be misapplied; and in none, perhaps, is it more commonly wasted than through the want of a degree of combination which prior communication among the working members of the Society might readily effect. Doubtless

it is a wise, if not an indispensable course, to accord the freest course to the various powers and opportunities of all who may be able and willing to labour in the common cause; and thus to leave to individual choice not only the selection within a very wide range of the topics to which, in each succeeding session, our attention shall be directed, but also the method of their treatment. And with freedom so unlimited, we can look for but scant measure of discipline, beyond such as each may think proper to impose upon himself. Yet there is undoubtedly much to be said in favor of such limitations upon this freedom as, being otherwise applicable, may keep it from degenerating into mere laxity, and depriving our proceedings of the unity and coherence so necessary to the accomplishment of a common purpose. And, accordingly, I believe there is amongst us a very general conviction of the superior value of such contributions to our proceedings as are distinguished by peculiar regard to the primary objects of the Society and tend to the conjoint illustration of particular topics, especially those of local and contemporary interest. The prime advantage of combination is now well recognized in the intelligent division of labor; and to the gradual growth of a co-operative tendency among such of our members as may devote themselves to the same or to allied sections of our common field of enquiry, we may, perhaps, justly look as to the source hereafter of a large and most welcome accession of power.

Every science is now pressed into the service of commerce; and commerce subserves, in turn, all the arts of life. It has itself risen to the dignity of a liberal art; and wherever carried on in consonance with the dictates of high principle, its masters are now more nearly the effective rulers of the affairs of nations than the men of any one profession have ever before been. We have the rare good fortune to find ourselves at the very seat and centre of the commercial energy of our time, fast by the very springs whence the blessings of material civilization are thus being diffused over the earth. For where, better than on the banks of the Mersey, may men observe how the exchange of objects produced in one region of our planet, to be consumed in another, does sooner or later, happily and inevitably, link together in the firm bonds of mutual interest, in habits of peaceful industry, and in a gradual elevation of all the incidents of human existence, nations divided not only by difference of blood, of language, and of religion, but by distance and difficulties of transit, which to the uncultivated intellect must alone have seemed for ever insurmountable. Or where more fitly learn how vast is the fund of power, convertible to the noblest uses, conferred upon nations as upon individuals, by superiority of intelligence, enterprise, and industry: or how much this power is augmented by discreet and unremitting study of the laws of nature, and by such advancement of the learning of our time as is the proper office of societies like ours.

The papers likely to be laid before you in the present session seem to promise a fair compliance with the expectations of the Society, even raised as these have been by the gradual improvement in number, variety, and excellence exhibited by these contributions to our proceedings in preceding sessions.

Let us trust—and trust with that faith which is born of earnest endeavour—that every succeeding session will find us still better provided. If it be not so, the deficiency will assuredly be traceable to ourselves. Within the distinct but co-ordinate limits of our three departments—archæology, literature, and science—we have scope for every branch of enquiry we can legitimately desire to pursue, for every investigation that can throw light upon the history of our district, illustrate its present condition, or suggest new steps in the career of growing utility and power which has already made that district the busiest and wealthiest section of a mighty empire, and given to it an influence in the affairs of mankind more potent than that wielded by any other of equal area and population on the face of the earth.

13*th November*, 1856. LITERARY SECTION.

DAVID BUXTON, Esq., in the Chair.

The minutes of the last two meetings were read and confirmed.

James Heywood, Esq., M.P., who had retired from the Society, was allowed to resume his connexion by paying the fees for Membership from the date of his temporary withdrawal.

The following selection from the donations was laid upon the table;—

From the Society. Memoirs of the Literary and Philosophical Society of Manchester, vol. vi. second series;—Dr. Robert Angus Smith's life of Dalton, forming vol. xiii. of the Memoirs of the Society.

From the Society. Journal of the Statistical Society of London, vol. xxx., parts 2 and 3, for June and September, 1856.

From the Society. Transactions of the Chemists' Association of Liverpool, 1856.

From the Author. Genealogical Essays, illustrative of Cheshire and Lancashire families, and a memoir of the Cheshire Domesday Roll, by George Ormerod, D.C.L., F.R.S.

From the Author. A pamphlet entitled The Manchester Exhibition Review. Royal Institution, 1856.

The following objects were exhibited:—

By Peter R. M'Quie, Esq. Stow's Survey of London, 1598. (Pub. 1603.)

By the Rev. Dr. Hume. A Chinese coin.

The following Paper was then read:—

On the Relation between the Material Progress of the United States, and the Capital and Labour of Europeans. *By Edward Clibborn, Esq., R.I.A.*

The opinions advocated in this paper will be understood from the distinct announcement in the title. It is undeniable that the commercial necessities of one or more countries stimulate the industry of another; and it is natural that the superabundant capital of one nation should sometimes find its direction and successful expenditure in another. But such effects are reciprocal; and they differ in degree according to circumstances. The necessity for a constant infusion of new blood, by emigration from the older countries, was dwelt upon; and such a change in population naturally leads to a corresponding change in manners, political principles, and social grades. These are becoming less appreciable, and in the course of time will practically disappear. The writer noticed a tendency in the natives of the United States, which has frequently attracted observation;—their avoidance of physical labour when possible, and their desire to live rather by the exercise of the intellect. This is, in effect, the exchange of the manual for some of the liberal arts.

20th November, 1856. SCIENTIFIC SECTION.

Joseph Mayer, Esq., F.S.A., in the Chair.

The Minutes of the last Meeting were read and confirmed.

The following gentlemen were balloted for, and declared duly elected members of the Society:—

William Lawrence Stroud, Esq., Oxton.
Thomas Croxton, Esq., Blue Coat School, Bolton.
A. Craig Gibson, Esq., Lower Bebington, Birkenhead.

The following donations were laid upon the table:—

From the Society. Memoirs of the Royal Astronomical Society, Vols. xi. to xxiv. (Fourteen volumes 4to.)

From Albert Way, Esq. An impression on gutta percha of a royal seal of Edward IV., for the Chancery of Monmouth as parcel of the Duchy of Lancaster.

Among the objects for exhibition were the following:—

By John Hartnup, Esq. Delineations of Saturn, as observed by a Newtonian Equatorial of 13 inch aperture, Nov. 1852, and March 27th and 29th, 1856; also a representation, on a large scale, of the Lunar Crater "Copernicus," taken at the Observatory at Rome, 19th Nov., 1855.

By the Rev. Dr. Hume. A curious tobacco pipe from the Crimea, with figures, &c., carved by a Sardinian Officer.

An impression from the small state seal of Oliver Cromwell.

Mr. Mayer, with a view to promote a better mutual acquaintance of the members of the Society, invited their attendance at his Museum in Colquitt-street, on Thursday evening, the 27th November.

The Paper for the evening was, On Binocular Vision, and the Theory of the Stereoscope, *by John Newton, Esq.*

That the right and left eye pictures of all near solid objects must be dissimilar appears so self-evident, and is so readily observed, that it seems useless to dwell on so plain a truth. And yet, until Wheatstone published his celebrated essay in the Philosophical Transactions for 1838, this great fact had remained barren of any result to the theory of vision. He drew right and left eye pictures of simple solids, such as a cube; and, on viewing them by an instrument which should unite the two dissimilar pictures optically (just as we do habitually by the convergence of the optic axes) he found that the two flat pictures vanished, and in their place appeared a single picture of startling solidity. The instrument itself he called a stereoscope; but the form he invented has given place to a simpler one contrived by Sir D. Brewster, and in place of the black diagrams of simple geometric solids, at first employed, Photography now enables us to take right and left eye pictures of the most complex kind, with an accuracy and beauty formerly quite unattainable. Portraits, domestic scenes, the glories of nature and art, are all presented to us in the stereoscope with a solidity and reality that has made it one of the most popular—as it is assuredly one of the most interesting discoveries of this age. Thus a main use of two eyes in vision is at once rendered capable of proof to every one, and it is now taught as a fundamental truth, established by Wheatstone, "that all our perception of solidity derived through the visual sense is consequent upon the mental combination of the two dissimilar pictures upon the two retinæ."* Again, the single vision which we enjoy with two eyes has been also attempted to be explained on various theories, as that of "corresponding points on the retinæ producing but one impression on the sensorium," and the so-called "law of visible direction." Now, I believe it will not be difficult to shew that all these are at best but imperfect theories, containing partial truths. They leave out of view the action of the single eye. The two eyes frequently differ in the same individual, both in optical perfection and in focal length. Such persons have much difficulty in using the ordinary stereoscopes. Again, in the majority of animals—even those most resembling man—the eyes do not converge, but are placed sideways to the front of the head. All the three theories therefore mentioned cannot apply to such. Yet we have every reason to believe that single vision with two eyes, and the power to appreciate distance and solidity must be as perfect with them as in man. Wheatstone's theory of solid vision fails also in not explaining solid vision with one eye; yet this most certainly exists. Many pass through life with but the use of one eye, yet I have seen such a person play at cricket, snuff a candle, thread a needle, and perform many similar acts, which, if the theory above quoted be true to its full extent, should have been physical impossibilities. Any one who has been obliged to employ but one eye for a considerable period, must have perceived how rapidly he improved in "monocular vision." Again, many pictures,

* Carpenter's Human Physiology, 5th Edition, p. 919, &c.

especially photographic copies, taken with striking contrast of light and shade, or, better still, the beautiful miniature copies of nature seen on the ground glass of the camera obscura, look extraordinarily solid. Yet all pictures are really "monocular" representations of objects as viewed with one eye. How is this, if the visual perception of solidity be entirely dependent on binocular vision? Again, in viewing distant objects or scenes, the optical parallax is so small that we have really two similar pictures (that is monocular, merely repetitions of the single-eye picture) on the two retinæ. Yet we appreciate the most distant view intensely, and readily distinguish it from a flat representation. To give the single eye the same advantages in viewing photographic pictures that the two eyes have in the best stereoscopes, I made a single eye instrument, substituting for the two semi-lenses one large lens. On viewing thus fine collodion positive pictures, some appeared to project in bold relief, especially portraits and copies of white statuary, but I did not find nearly so much illusion in the best views or landscapes I could take.

At present a fierce conflict is raging amongst photographers, which seems as far from settlement as ever, viz.: the distance at which the two cameras should be placed asunder in taking the double picture for the stereoscope. Many follow Sir D. Brewster, who stoutly maintains that the two lenses employed should be separated the same distance as that betwixt the human eyes, viz.: two and a half inches, and should converge upon the object. Undoubtedly in this way we get sufficient relief for very near objects, as portraits; but it is equally certain that we cannot thus get the effect of distance in landscapes. M. Ferrier, whose stereoscopic transparencies are so famous, separates his lenses to far greater distances. Thus, in a panoramic view of Paris, taken from the top of Notre Dame, he took one picture from one of the towers, the second from the other. How shall we reconcile these apparent discrepancies? I think this will not be difficult by giving its due value to monocular vision. Two monocular pictures of near objects—as a group of statuary—that is, two pictures taken without moving the camera, unite in the stereoscope to give an appearance of decided relief, as I have ascertained—though not so great, of course, as when the camera was moved. Also, for near objects a slight separation of the cameras produces a considerable angle of parallax. Now, I have shown that in viewing distant objects our eyes unite two monocular pictures. These pictures, indeed, are perfect, with all the atmospheric effects, the ever varying grades of light, and shade, and colour, which constitute natural perspective. But in the best photograph there is no atmosphere. The shadows are opaque. The varying tints of colour are wanting; worse still, they are rendered entirely wrong, green and red appearing as black, whilst even dark blues appear as whites in the resulting pictures. To make up for these, and innumerable other defects and shortcomings, it is found absolutely necessary to exaggerate greatly the optical parallax before the effect of distance can be duly witnessed in the stereoscope, for all views except very near ones. The lenses of our cameras have a focal length of about five inches, those of our eyes of not quite one inch; so that our stereoscopic cameras may rather be compared to the eyes of giants, which would be placed about twelve inches asunder. Thus, Sir D Brewster is evidently wrong both as to theory and practice. The fact is, no exact rule can be laid down for taking stereoscopic pictures, and practice alone can determine the optical parallax which will give the effects desired. To recapitulate, solid vision cannot be accounted for by any known optical law. It is not a blind instinct born with us, but the result of the impressions—the education of a lifetime. The infant sees only flat pictures, all objects appearing at the same distance, and it gropes like a blind man for many months, during which the other senses, especially that of touch, are continually used to correct the evidence of the eyesight. Such has, we know, been the case with those who have recovered the sight of both eyes later in life, after operations for cataract. Another use of binocular vision, besides that pointed out by Wheatstone, is, no doubt, to intensify the image by repetition of the sensory effect on the two retinæ. Muller, and other physiologists, have, indeed, denied that anything is gained in illuminating power by the use of two eyes. If one eye only be used the pupil is said to dilate so as to admit double the quantity of light. This I believe to be an error. The united picture in the stereoscope always appears brighter and more distinct than either

separately. I took two photographs in rapid succession, of the same individual, one eye being closed in the first instance, and on measuring the diameter of the pupil with a micrometer microscope, there appeared extremely little difference in the two cases.

We have, then, two eyes, first, that the impression on the sensorium may be intensified by repetition; secondly, as a safeguard, that if the use of one be lost, so precious a sense may still be retained; thirdly, that the two dissimilar impressions may afford data for estimating more perfectly the distances and directions of near objects; besides other less important uses.

It is deeply interesting to notice the many analogies between the senses of hearing and of sight. Thus, we have single hearing with two ears,—binaural hearing,—the result of the union by the sensorium of the two dissimilar impressions. And if the brain be disordered, as by intoxication, or bodily ailments, double vision, as well as confused hearing, are common results. Nay, the musical pitch of the two ears often differs, say half a note, just as the focal length of the two eyes often differs. Binaural hearing also enables us to judge of the direction and distance of sounds—solid hearing. The axes of the two auditory apparatus are not opposite each other, but form an obtuse angle directed forwards and outwards. According to Buchanan, the direction of this angle exercises a remarkable influence on the auditory sensibility. Monoaural hearing will give us a partial appreciation of distance by the perspective, as it were, of sounds; their varying intensity, their light and shade; whilst the dissimilar impressions on the two ears render this determination far more perfect.

To conclude, the eye and the ear are to us what the instruments of the surveyor are to him; they are widely separated to give us a base line, at the ends of which are stationed our most perfect instruments of observation. At first we judge of the dimensions, forms, and distances of objects by the sense of touch. We grope about the world. After a time, and very slowly, we transfer the information thus gained to the eye and the ear, which, as they become more highly educated, enable us to judge of distance and direction without actual contact.

[This paper was illustrated by a large number of Stereoscopic views, and various instruments, including several forms of Brewster's Lenticular Stereoscope; Knight's Cosmoramic Stereoscope; a new form of Stereoscope, with lenses of large size, by Abrahams, Lord-street; and a very large Wheatstone's reflecting Stereoscope.]

4th December, 1856.—ARCHÆOLOGICAL SECTION.

J. Towne Danson, F.S.S., V.P., in the Chair.

The minutes of the last ordinary meeting were read and confirmed.

After the usual ballot, the following were declared duly elected as members of the Historic Society:—

Sir J. P. Kay Shuttleworth, Bart., Gawthorp Hall, Burnley.
John Ansdell, Esq., St. Helens.
Frederick Broughton, Esq., Ulster Railway, Belfast.
W. G. Crory, Esq., 7, Upper Duke Street.
Walter W. Driffield, Esq., York Buildings, Sweeting Street.
Robert Evans, Esq., Eldon Grove, Rock Ferry.
John O'Donnell, M.D., 34, Rodney Street.
Rev. Philip Frost J. B. Hains, The Parsonage, Hoylake.
Edward Howell, Esq., Church Street, Liverpool.

The following donations were laid upon the table:—

From Lord Londesborough. Miscellanea Graphica, No. ix.

From the Author, Chas. R. Smith, Esq. Collectanea Antiqua, vol. ii, pts. 1 and 2.

From the Author. How to Learn, and what to Learn, by Rev. Dr. Booth, Treasurer of the Society of Arts.

From the Editor. The Scottish Field, edited by John Robson, M.D., 1855, for the Chetham Society.

From the Society. Report presented to the Cambridge Antiquarian Society, at its 16th General Meeting, May 5th, 1856. Also communications made to the Society, No. 6.

From T. T. Wilkinson, Esq., F.R.A.S. Fragments of ancient burial urn found at Catlow Stone Quarry, on the Briercliffe ridge of hills, near Saxifield, and Castercliffe.

Dr. Hume exhibited a fine specimen of the "leathern bottel."

Thomas Marshall, Esq., of Preston, exhibited three Roman silver coins found near Preston; two Trajan, one Vespasian.

The following Paper was then read:—

On the Battle of Brunanburh, and the probable Locality of the Conflict,* *by T. T. Wilkinson, F.R.A.S.*

11*th December*, 1856. LITERARY SECTION.

Peter R. M'Quie, Esq., in the Chair.

The minutes of the last meeting were read and confirmed.

The following gentlemen were balloted for and duly elected members of the Society.

Robert Brown, Esq., Preston.
Edward Cranage, Ph.D., Old Hall, Wellington, Salop.
W. Hope Jones, Esq., Hooton.
James Kershaw, M.P., Stockport.
John James Myres, Esq., Bank Parade, Preston.
Henry Newsham Pedder, Esq., Preston.
Joseph Robinson, Esq., Lord Street.
Richard Threlfall, Esq., Avenham Terrace, Preston.
Thomas Walmsley, Esq., Preston.

The following donations were laid upon the table.

From the Society. Journal of the Royal Asiatic Society, vol. x. 3 pts, vol. xiv, pt. 2.

From the Society. Proceedings of the Liverpool Philomathic Society, vol. i. for 31st session, 1855-56.

From the Author, D. P. Thomson, Esq., M.D. Liverpool Described, 1854. The Philosophy and Poetry of Weather Knowledge.

Dr. Macintyre exhibited an ancient episcopal swivel seal with three facets, on which are engraved the Diocesan and personal arms with crest and cipher. Also a minute ivory carving of the crucifixion with two figures at the foot of the cross, probably the Virgin and St. John.

The Chairman on behalf of the Society then presented Dr. Thom with the Diploma of Life Membership, as resolved upon at the Special General Meeting on the 4th instant.

The following Paper was then read:—

On Poetic Resemblance, Imitation, and Plagiarism,† *by David Buxton, Esq.*

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* Transactions, p. 21. † Transactions, p. 77.

18*th December*, 1856. SCIENTIFIC SECTION.

THOMAS SANSOM, A.L.S., in the Chair.

The Minutes of the last Meeting were read and confirmed.

After a ballot the following gentlemen were declared duly elected members of the Society.

Captain Campbell, R.L.A., North Battery.
Samuel Cartwright, Esq., Bushell Place, Preston.
Rev. Thomas Corser, M.A., Stand, Manchester.
Henry Gerard, Esq., 52, Canning Street.
Thomas Holden, Esq., Summerfield, Bolton.
Philip Juncker, Esq., Monckton lodge, Anfield, Walton.
Thomas Beeby Mosley, Esq., English and Irish Telegraph Company, Liverpool.
Robert Towneley Parker, M.P., Cuerden Hall, Preston.
Rev. W. Quekett, M.A., Rectory, Warrington.

The following donations were laid upon the table :—

From the Society. Notices of the Royal Astronomical Society, vols. viii, ix (unbound), x, xi, xii, xiii, xiv, xv.

From the Society. Proceedings of the Royal Society of Edinburgh, 1853-54, 1854-55, 1855-56.

From Mr. Rundell. Specimens of incrustations from steam-boilers.

Mr. Leyland, from Honduras, exhibited a large number of specimens in Natural History, chiefly birds. These were described by Mr. Moore, of the Derby Museum, who said they were particularly interesting on geographical grounds, as showing the southern limits of some of the species, and the northern limits of others.

The following particulars respecting the swivel seal exhibited at the last meeting by Dr. Macintyre, were furnished by Dr. Hume. The seal belonged to Robert Calverley, D.D., Bishop of Peterborough. He was of an Essex family, was a fellow of University College, Oxford; was appointed Regius Professor of Hebrew in 1715; was afterwards Canon of Christ Church, Oxford; was appointed Bishop of Llandaff in 1725, and translated to Peterborough in 1728, where he died in 1748. One facet of the seal contains his official arms, Peterborough Diocese impaling Calverley; another, the cipher R. C., direct and reversed; and the third his family crest, which however he as a Clergyman was not entitled to use.

The following Papers were then read :—

ON THE YAK, OR GRUNTING OX OF THIBET;* AND SOME OF THE RECENT ADDITIONS TO THE FREE PUBLIC MUSEUM, *by Thomas J. Moore, Esq.*

ON SOME FOSSIL TREES RECENTLY DISCOVERED AT BURNLEY,† *by T. T. Wilkinson, F.R.A.S.*

1*st January*, 1857. ARCHÆOLOGICAL SECTION.

JOHN ROBSON, M.D., in the Chair.

The minutes of the last meeting were read and confirmed.

After the usual ballot, the following gentlemen were declared duly elected members of the Society :—

Francis James Eaton, Esq., 41, Richmond Terrace, Breck Road.
William Marshall, Esq., Penwortham Hall, Preston.

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* Transactions, p. 43. † Transactions, p. 99.

James Steains, Esq., 5, Upper Kensington.
Rees Woods, Esq., Manchester.

The following donations were laid upon the table :—

From the Society. Sussex Archæological Collections, vol. i. 2nd edition, 1853, and vol. vii, 1854.

From the Society. Proceedings and Papers of the Kilkenny and South East of Ireland Archæological Society, vol. i, new series, Nos. 2, 3, 4, 5.

From the Author. Lothian, its position prior to its annexation to Scotland, by John Hodgson Hinde, Esq., 1856.

From the Author. Additions and index to Miscellanea Palatina, by George Ormerod, D.C.L., F.R.S., &c.

From Mrs. Ann Maria Heaton, Edge-hill. A Map of Chester, 1643.

From T. T. Wilkinson, F.R.A.S. Two stones from Castercliffe, near Colne; one specimen completely vitrified from intense heat, the other partially burnt through.

The following interesting objects were exhibited :—

By Joseph Mayer, F.S.A. A Saxon ornament in gold, set with garnets and enamel in blue, red, and white, formed like a bird's head and neck.

A Saxon ornament found near Cologne, round in form, and 2½ inches in diameter, in gold, with raised collets or settings for receiving stones of which three were in place.

Two studs in silver, on which were the interlaced griffins or serpents usually found on crosses and other objects of Anglo-Saxon and Danish origin.

Numerous fibulæ of Roman, Merovingian, and other periods.

Also an object of much local interest, a pint mug made in Liverpool about the middle of the last century. It is of the usual white or cream-colour body, and on the front is a sort of chain ornament in which is inscribed in the same style as the ornaments (coloured or filled in blue,) "Ser William a Plumper." It was made at the time or soon after the celebrated election of 1761, when the potters were so numerous as to carry the election, most of them giving plumpers for Sir William Meredith, and thus placing him at the head of the poll. The mug had long been in the possession of the ffarington family, and was recently presented to Mr. Mayer by Miss ffarington, of Worden Hall, near Preston.

By Peter R. M'Quie, Esq. The eleventh collection of twenty-four views of remarkable remains of Abbeys, Castles, &c., in the county of Kent. Published by Nath. and Sam. Buck, April, 1736.

By Rev. Dr. Hume. A Maori figure, showing the postures adopted in various New Zealand war dances, and also the general pattern used in tattooing.

Mr. Mayer read a note which he had received from John M. Kemble, Esq., of Manchester, inviting him to exhibit his Anglo-Saxon and Celtic collection at the Art Treasures Exhibition, to be held this year in Manchester.

Mr. Wilkinson, F.R.A.S., gave some particulars respecting the two specimens from Castercliffe, which he had presented to the Society; and made a few observations upon some of the antiquities of the county.

The following Paper was then read :—

THE CASTLE HILL OF PENWORTHAM,* *by Rev. W. Thornber*, assisted by the notes and illustrations of *Charles Hardwick, Esq.*, of Preston.

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* Transactions, p. 61.

8th *January*, 1857. LITERARY SECTION.

JOHN POOLE, Esq., in the Chair.

The minutes of the last meeting were read and confirmed.

The following donations were laid upon the table:—

From the Society. Journal of the Royal Geographical Society, vol. XXV. 1855. Proceedings of the Society, Nos. 3, 4, and 5.

From the Society. Transactions of the Philological Society, No. 14, for 1855.

Dr. Hume exhibited and described a volume which had been forwarded to him by Professor Rafn, of Copenhagen, entitled, "Inscription Runique du Pirée." It is written partly in French, and partly in Danish, and gives a translation in both languages of a Runic inscription on the body of a monumental lion, formerly preserved at the Pireus, but now removed to Venice. Numerous analogous inscriptions are given, from Denmark, and various other parts of the north.

The Secretary announced that he had received a large parcel of books as a present to the Society from the Royal Society of Northern Antiquaries, Copenhagen. At a future meeting he would lay them on the table.

Attention was called, by a member, to some portions of the annual address of the President of the Royal Geographical Society, the late Admiral Beechy; particularly those relating to the operations of the Liverpool Compass Committee, and the completion of the Ordnance Survey of Great Britain and Ireland.

The Paper for the evening was then read:—

ON THE LANGUAGE OF LANCASHIRE UNDER THE ROMANS,* *by R. G. Latham, M.D., F.R.S.*

15th *January*, 1857. SCIENTIFIC SECTION.

J. T. DANSON, F.S.S., V.P., in the Chair.

The minutes of the last meeting were read and confirmed.

Richard C. Naylor, Esq., of Hooton, late High Sheriff of Cheshire, having signified his wish to remain a member of the Society, was duly enrolled, in accordance with law xiii.

The following donations were laid upon the table:—

From the Society. Transactions of the Literary and Philosopical Society of Leeds. Vol. I. part i. 1837.
Annual reports for 1852-3, 1853-4, 1854-5, 1855-6.
An account of an Egyptian mummy presented to the Society by the late John Bloyds.

From the Society. Quarterly Journal of the Geological Society, Nos. 46, and 47. May and August, 1856.

From the Author. Report from the Mersey Inquiry Committee, by Joseph Boult, Esq., 1857.
An Inquiry into the position of the Old Lighthouse at Wallasey-Leasowes, and of the ancient village of Altmouth, by Joseph Boult, Esq.

From James Boardman, Esq. A copy, annotated by himself, of Mr. Mayer's paper on Roscoe and his influence on the fine arts. [*Transactions*, Vol. V. p. 142.]

Dr. Hume read a circular from the Mayor of Chester, as President, and from Mr. Wynne Foulkes, the Honorary Secretary of the Local Committee at Chester for receiving

* Transactions, p. 1.

the Archæological Institute from London. It was suggested that a Committee might be formed from among the members, to obtain objects for the temporary museum, suitable papers, &c. It was resolved unanimously, that the Council be authorised to take such steps as they may think right for the promotion of these objects.

Mr. Rundell exhibited a specimen card, on which he had constructed a diagram for giving by mere inspection the true bearing of the sun or other heavenly body, when its altitude and declination, or its hour angle and declination are known—intended for use at sea, for giving correct courses when the compass is affected by local attraction.

John Hartnup, Esq., F.R.A.S., gave some interesting particulars of the recent occultation of Jupiter and his moons, as seen by him through the great equatorial at the Liverpool Observatory.

The paper for the evening was then read:—

On the Importance of Testing Chronometers used at Sea, with Examples,* *by John Hartnup, F.R.A.S., V.P.*

5th February, 1857. ARCHÆOLOGICAL SECTION.

Peter R. M'Quie, Esq., in the Chair.

The minutes of the last meeting were read and confirmed.

Richard Watt, Esq., of Speke Hall, was duly elected a member of the Society.

The following donation was laid upon the table.

Vol. V. (1849) parts 3 and 4, VI. (1850), VII. (1851), VIII. (1852), IX. (1853), X. (1854), of the Journal of the British Archæological Association.

Among the objects of interest exhibited were the following:—

By Mr. Mayer. An almost unique chatelaine, being a Roman matron's bunch of keys, found at Colchester.

A number of fibulæ from Colchester and other places, chiefly of Roman workmanship, although some were supposed to be British.

By Mr. Blackmore. A medal of Sigismund, Emperor of Germany, on which he is designated the commander-in-chief of the Catholic forces. It was probably struck at the conclusion of the eighteen years' war, and after his death.

By Mr. Grazebrook. An antique couteau de chasse, and a poniard. Both were found in excavating the old Liverpool dock, now the site of the Custom House.

By Mr. M'Quie. A manuscript folio volume of some local interest, entitled "The Moore Rental," dated 24th February, 1667, and written by Sir Edward Moore, of Old Hall and Bank Hall in the county of Lancashire.

A very antique earthenware "salt-celler," said to have been used on the table of the first mayor of Liverpool.

A curious "syllabub mug," which in byegone years was passed round the table of the Moore family, each one imbibing a portion from the spout.

By Mr. A. R. Lingard. An interesting gold etwee case, a fashionable appendage to a lady's attire in the early portion of the last century; also two curious marriage medals.

By Rev. Dr. Hume. Three gutta percha seals, one of Great Grimsby in Lincolnshire, the legend on which he described. He also exhibited two local seals, as examples of what are termed "canting arms," those of Brewton and Horncastle.

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* Transactions, p. 11.

The Honorary Secretary made some remarks on "The Moore Rental," and expressed an opinion that it ought to be purchased by the Town Council for the Free Public Library.

Mr. Mayer said the old "salt celler" was of Dutch or Delft ware. The syllabub-mug he thought was of Liverpool make.

The following paper was then read :—

ON A VORTEX WHEEL NEAR KENDAL, WITH SUGGESTIONS ON WATER WHEELS, *by G. Grazebrook, Esq., F.S.A.*

After glancing at the advantages of applying water power to agricultural machinery, where practicable, and its superiority over steam for this purpose, with a comparison of first cost and current expenses between the vortex wheel, a steam engine, and their equal in horses,—the paper gave a description of a vortex wheel on Mr. Thomson's patent, recently erected at Holmescales farm, near Kendal, the property of W. E. Maude, Esq. An account of the trial was referred to in the *Kendal Mercury* of 29th October, 1856. This wheel—10 inches in diameter, with a 30 feet fall through a 9-inch supply pipe—attains 60 revolutions per minute, with about 8 horse power, and works all the machinery of the farm. A full account of the principle was given by Mr. Thomson to the British Association in 1852, and will be found in the report for that year.

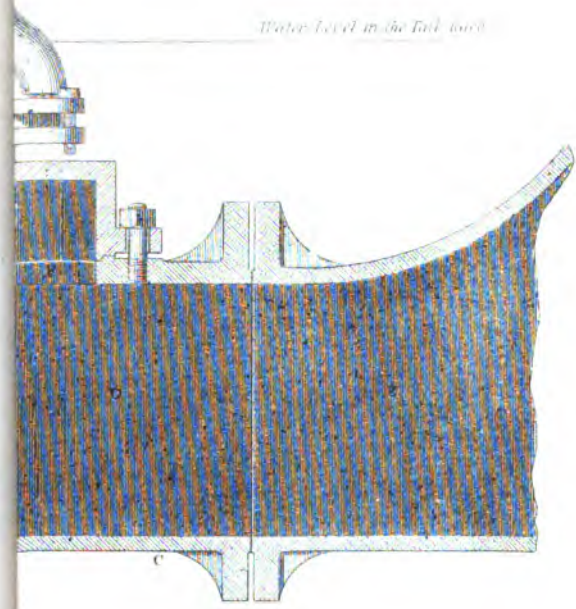
In the accompanying illustrations, for the use of the plates for which we are indebted to the British Association :—

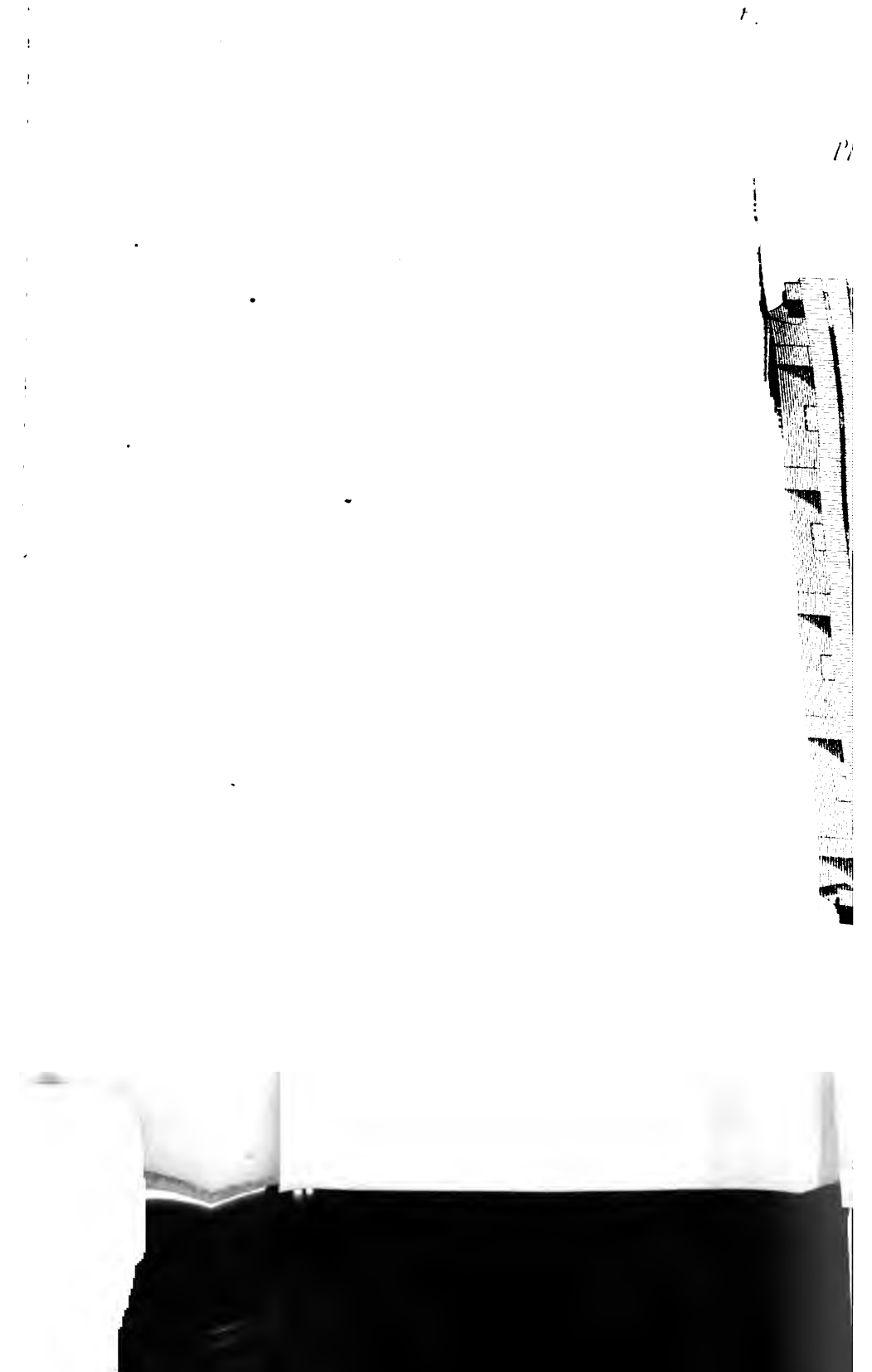
A A [Plan and Section] is the water wheel, fixed on an upright shaft B. It is composed of a disc of thin iron, with vanes both on its upper and under sides (as shown to a larger scale in another part of the plate) carried in a certain distance towards the central boss :—this wheel occupies the centre of a strong cast iron case, C C, firmly bolted together by tie bolts P. The outer portion of this case is occupied by four guide-blades, G G, which direct the water tangentially on to the wheel. These blades fit close to the top and floor of the case, and can be moved by a spindle, K, with cranks, &c., so as to enlarge the exit and regulate the quantity of water admitted to the wheel. The water is introduced through entrances, F F, from the supply chamber, D D, [Section] (itself fed by E the supply pipe). In the Holmescales vortex this chamber is dispensed with, the supply being brought direct into the guide-blade chamber, which is made a little larger to admit of a rotatory motion of the water behind the roots of the guide-blades; also the blades are not moveable. The water having entered the wheel from between the guide-blades, passes through the vanes, and having expended its power escapes at the centre, which is left open both above and below,—where two annular pieces, L L, are fitted close to the orifice of the wheel. After passing out at this centre or vortex, the spent water runs away. M [Section] is the pivot on which the shaft works, and N a bridge to support the pivot; the whole case and its contents being sunk beneath the level of the tail race. The guide-blades are arranged to have such an orifice as only to allow the exit of half the supply, the remainder forming pressure in the supply pipe; and these proportions are found so correct that the full power is obtained, and the spent water is discharged in a state of rest. Mr. Thomson's later erections have been somewhat simplified, especially when applied to farm purposes. The advantages of the vortex wheel are :— 1. Eighty per cent. of the power due to the water is secured—the greatest yet attained by any principle of water power. 2. Great regularity of speed, and economy of water 3. It is not affected by floods or ice.

Mr. Grazebrook then glanced at the history of the invention, and noted several erected by Mr. Thomson, especially one not yet completed near Ballyshannon, Co. Donegal, intended to work up to 150 horse-power, with a 14 feet fall.

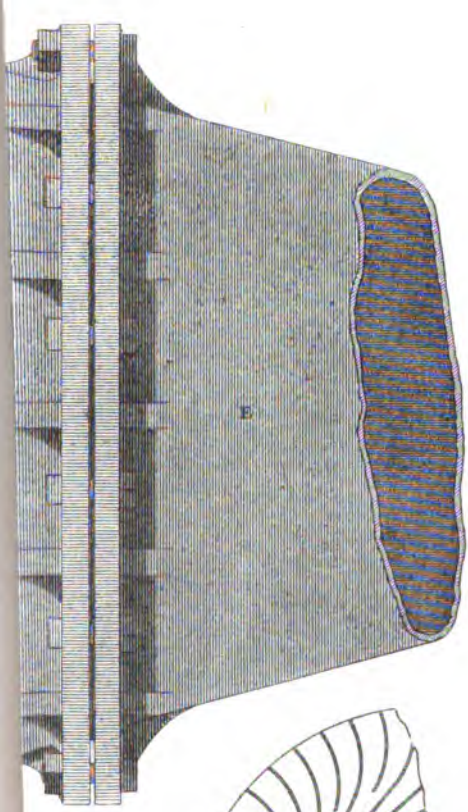
The suggestions on water wheels pointed out several ways in which the power of our old-fashioned undershot breast and overshot wheels might be eked out at trifling expense. In our village mills, the same faulty construction has been followed for centuries. Metal, which offers many advantages, will no doubt replace wood in the construction of new ones; but new principles should be applied as well.

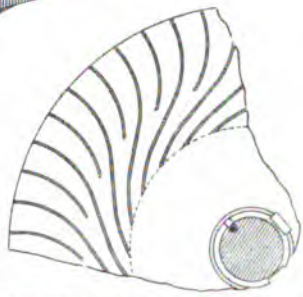
Sectional Elevation





Plan





Part of the Wheel on a larger scale to show the form of the vanes more accurately

4 Feet

The advantages arising from wheels working horizontally with perpendicular shafts were insisted upon, and various suggestions were made for decreasing the effect of friction in the supply pipes, and in placing them so that the column of water might produce a maximum effect.

In conclusion Mr. Grazebrook observes —

"The use of Turbines, to which general class Mr. Thomson's vortex belongs, is certainly the great modern discovery in water wheels. The best before Mr. Thomson's was known, was invented about thirty years ago by M. Fourneyron. His turbine works on a principle the reverse of Mr. Thomson's, viz.: from the centre out,—centrifugal instead of centripetal,—the water being directed by reversed guide-blades against the inside curve of the float-boards, which alone, like an annular strip of wheel, revolves. This wheel in its case is sunk below the surface of the tail race, and in some cases has worked up to 80 per cent., or even higher. There is one great fault, I think, in this wheel, viz.: the water strikes it inside, where, owing to the smaller diameter, the power is less, and the spent water is cast off at the outer circumference where the speed is greatest."

"This leads me to my last "suggestion," viz: "a wheel, made of an annular strip of fan-like floats closed in above and below, and surrounded by a circular supply case, fitted with guide-blades, which would cast the water on to the outer circumference; this case might be fed by three or four cone shaped tubes brought down a little out of the perpendicular, to give a greater rotatory motion to the water which might possibly be of advantage. The radii of the wheel would be made of a form to pass through the spent water with the least resistance, as the whole would be sunk beneath the tail race, and some spent water would escape above and some below. If, what I have before suggested, the principle of conical supply pipes, prove correct, it may be found better to enlarge this supply case, so as to have a free passage outside the roots of the guide-blades, and to bring the water on by one or two such conical pipes. Turbines made on this plan would, I think, possess several advantages, and a greater per centage of power than M. Fourneyron's, owing to the water acting on the outer circumference, where it would have more effect. Now M. Fourneyron's turbines have in some cases worked to as high a per centage as Mr. Thomson's vortex, and that with the manifest fault I have pointed out, and which is corrected in my suggested new turbine. I would ask engineers to look into this proposal. By applying their practical knowledge they might perhaps construct a wheel with the greatest per centage of power yet obtained."

Dr. Hume read a letter from Mr. Thomson, of Belfast, who had forwarded a model and drawings, to illustrate his invention and the paper for the evening. Some recent improvements were described, and the utility of lignum vitæ bearings for the submerged pivot.

12*th February*, 1857. LITERARY SECTION.

Rev. A. Ramsay, A.M., in the Chair.

The minutes of the last meeting were read and confirmed.

The following donations were laid upon the table.

From the Society. Proceedings of the Literary and Philosophical Society of Liverpool, No. 10, for Session 1855-56.

From the Author. Voyage à Constantinople, par M. Boucher de Perthes. Two vols. 1855.

From Mr. D. Lamb. The Athenæum for 1856.

From Mr. Johnston, Church Street. Five volumes Shakespeare's Plays, 1714. First Report of the District Provident Society, 1829.

From Mr. J. W. Whitehead. A curious Horse-bell, one of a set, from Gloucestershire.

The following objects of interest were exhibited:—

By Mr. Mayer. English Bards and Scotch Reviewers, by Byron, with Portraits and Autographs, and a variety of other illustrations.

By Mr. J. Boardman. The original MS. of an original poem by Mrs. Hemans, with an accompanying letter addressed to Miss Wagner, of Liverpool.

By Mr. George Grazebrook. A gutta percha model of a Brass Tablet, supposed to be an ecclesiastical decoration belonging to the shrine of some saint, now placed in the British Museum.

The Honorary Secretary announced that a committee of members of the Society had been formed to co-operate with the local committee at Chester, for the coming meeting in that city of the Archæological Institute.

In reply to a question by Mr. Buxton, he said the Council did not consider the time had yet arrived when the Historic Society could with propriety take notice of the munificent offer of Mr. Brown, (a member of the Society,) to the town of Liverpool. The subject had not been lost sight of, and at the proper moment action would be taken.

Mr. Grazebrook alluded to a rumour that some Saxon remains had been discovered at Wallasey, in removing the rubbish caused by the late fire.

The following Paper was then read:—

On Comparative Philology considered as an Aid to History.* *By the Rev. A. Ramsay, M.A.*

19th February, 1857. SCIENTIFIC SECTION.

J. T. Danson, Esq. V.P., in the Chair.

The minutes of the last meeting were read and confirmed.

Captain Robert Mather, of Finch House, was duly elected a member of the Society.

The following donations were laid upon the table:—

From the Society. Transactions of the Liverpool Polytechnic Society, January 1853, to May, 1856.

From George Grazebrook, Esq. A water-colour sketch of the present appearance of Wallasey Church.

From James Heywood, Esq., M.P., F.R.S., &c. A small medal commemorative of the Manchester meeting of the British Archæological Association, 1850.

From J. T. Danson, Esq., V.P. Camden's Britannia, by Richard Gough, second edition, with maps and plates, 4 vols. folio.

The following objects of interest were exhibited:—

By Eyre Evans, Esq. A magnificent volume, formerly the property of the late Mrs. Putland, of Paris, printed in letters of gold on vellum; each skin surrounded by a broad border illuminated by hand. It was got up by Whittaker in 1816, and was dedicated to the Prince Regent, It contained "Magna Carta, Regis Johannis," occupying eleven skins, and "Consentio inter Regem Johannem et Barones," occupying two skins more. The marginal emblazonings contain the shields of the principal attesting Barons. The frontispiece is a beautiful portrait of King John. It was said that only four copies of the work had been got up in this style.

By Mr. R. Ready, of Cambridge. An interesting and extensive collection of Seals, consisting of Royal, Baronial, Episcopal, Conventual and Corporate Seals; upwards of 1000 in all.

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* Transactions, p. 105.

The honorary Secretary laid some copies of the Catalogue of the Museum and Library upon the Table, and stated that as it was intended merely as the basis of a permanent catalogue, copies would be sent to those members only who applied for them.

Dr. Hume having announced the death of the Earl of Ellesmere, the following resolution was adopted unanimously:—

> "The Society being informed by its honorary Secretary of the death of the Right Honourable the Earl of Ellesmere, one of its members, which event has been made known in Liverpool this day, desires to take this earliest opportunity of recording the deep feeling of regret with which it learns the loss it has thus sustained, and its sense of the ability and kindness displayed by that nobleman in his connexion with the Society as its President for the period of six years."

The following Paper was then read:—

THE COMMERCE OF THE MEDIAL EAST.* *By John Locke, Esq., B.A., with illustrations.*

5th March, 1857. ARCHÆOLOGICAL SECTION.

REV. J. S. HOWSON, M.A., V.P., in the Chair.

The minutes of the last meeting were read and confirmed.

Thomas Carr, Esq., of Lower Bebington, was duly elected a member of the Society.

The following donations were laid upon the table:—

From the Archæological Institute. The Archæological Journal, Nos. 49 and 50, March and June, 1856.

From the Numismatic Society. The Numismatic Chronicle and Journal, vol. xviii. No. 4.

From the Author. History of the Parliamentary Representation of Preston during the last hundred years, by W. Dobson, Esq.

From Thomas G. Wedgwood, Esq. Epistolæ Ho-Elianæ, or familiar letters, Historical, Political, and Philosophical, by James Howell, 3 vols. in one, 1655.

From Lord Londesborough. Miscellanea Graphica. No. x.

From the Author. Arena Cornubiæ, or the claims of the Commissioners of Woods and Forests to the Sea Coasts and Banks of Tidal Rivers, by J. W. Pycroft, F.S.A.

From Mr. J. Mayer. Catalogue of specimens in the Museum of Economic Geology, illustrative of the Composition and Manufacture of British Pottery and Porcelain.

From Mr. J. T. Danson. Report of the Committee of the Wirral Agricultural Improvement Society on Weights and Measures used for the sale of Agricultural products.

From Mr. G. Grazebrook. Impression from Seal of the Free Grammar School of Darlington, 1561, with a likeness of Queen Elizabeth in a curious hooped dress.

From Mr. T. B. Ryder. Journal of the Manchester and Liverpool Agricultural Society.

The Rev. J. S. Howson exhibited a curious work illustrated by plates and charts, entitled "D. Paulus Apostolus in Mari, &c," by D. Ignatio Georgio.

Dr. Hume called attention to the arrangements which were being made by the Town Council for laying the foundation-stone of the new Public Library and Museum. It

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* Transactions, p. 119.

was thought some steps should at that time be taken to associate the Historic Society with the proceedings, and show its appreciation of the act.

It was moved by Mr. Danson, seconded by Mr. Steains, and resolved:—"That the Council be instructed to prepare an address for presentation."

The honorary Secretary then read some observations from the proof sheets of Mr. Hardwick's forthcoming History of Preston, to the following effect:—

(1.) *The Cuerdale "Find."* After describing the place and the general character of the objects, Mr. Hardwick quotes Lindsay's Analysis of the coins procured, and gives also the remarks of Worsaae, from his "Danes in England."

(2.) *Site of Brunanburh.* From an examination of the general evidence, a new site for Brunanburh is suggested, viz., Brownedge (formerly Ban-berg), beside Walton-le-dale, in the neighbourhood of Preston.

(3.) *Penwortham Castle.* After a notice of the fact that the Castle existed at the time of the Domesday Survey, and a description of the objects found in June 1856, the writer examines the theories which have been advanced to account for the existing facts. He thinks it possible that the hill may have been used in Saxon and even in Norman times as a "Mote Hill;" but that no erection of any importance occupied the position of the present Church at the bottom of the hill.

The following Paper was then read by the Author, and elicited a lengthened and interesting discussion:—

RESULT OF AN EXAMINATION OF THE LIVERPOOL TIDE GAUGE REGISTERS, FOR THE YEARS 1854, 1855, 1856.* *By Lieut. Murray T. Parks, R.N.*

12*th March*, 1857. LITERARY SECTION.

DAVID BUXTON, M.R.S.L., in the Chair.

The minutes of the last meeting were read and confirmed.

George T. R. Preston, Esq., of Rock House, was duly elected a member of the Society.

The following Donations were laid upon the table:—

From the Society. Journal of the Ethnological Society, vol. iv., 1856. Regulations of the Society. List of the Society.

From the Society. Journal of the Statistical Society of London, vol. xix., part 4, Dec. 1856; vol. xx., part 1, March, 1857.
First Report of the Committee on Beneficent Institutions. 1. The Medical Charities of the Metropolis, 1857.

From the Society. Proceedings of the Royal Geographical Society of London, No. vi., January, 1857.

From the Author. An inquiry into the origin and authorship of some of the earlier Waverley Novels, by Gilbert J. French, Esq. Privately printed.

From the Author. Report of the Health Committee of the Borough of Liverpool on the Sewerage, Paving, Cleansing, &c. By James Newlands, C.E., Borough Engineer.

From Mr. T. Varty. A Photograph of Wallasey Church, taken before the late fire.

From Mr. A. Craig Gibson. Remnants of Rhyme by Thomas Hoggart, of Troutbeck.

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* Transactions, p. 223.

The following objects of interest were exhibited:—

By Mr. Blackmore. A crown piece of Mary Queen of Scots, in a superior state of preservation.

A medal commemorative of the Restoration of Charles II. date 1675, probably the work of the well-known die sinker Thomas Symon.

By Mr. A. Craig Gibson. A MS. volume of miscellaneous poetry by Thomas Hoggart, of Troutbeck, autographs, &c.

The following Paper was then read:—

REMARKS ON THE LIFE AND WRITINGS OF THOMAS HOGGART, OF TROUTBECK. *By A. Craig Gibson, Esq.*

19th March, 1857. SCIENTIFIC SECTION.

J. T. DANSON, F.S.S., V.P., in the Chair.

The minutes of the last meeting were read and confirmed.

Wm. Henry Grimmer, Esq., of 6, Castle Street, was duly elected a member of the Society.

The following donations were laid upon the table:—

From the Society. Report of the Proceedings of the Geological and Polytechnic Society of the West Riding of Yorkshire, vol. ii. 1842–'48; vol. iii. 1849–'55.

From the Society. Proceedings of the Royal Society, Nos. 21, 22, 23 and 24.

From Dr. Hume. Some papers relating to the Society of Arts, London.

Among the objects of interest exhibited were:—

By Mr. C. S. Gregson. Some extraordinary varieties of Lepidoptera found in the neighbourhood of Liverpool.

By Mr. Mosley, of the Magnetic Electric Telegraph Company. Specimens of the effects of the Electric storm of March 18th, on the Telegraph wires near Preston.

The following Paper was read:—

ON THE LEPIDOPTERA OF THE LIVERPOOL DISTRICT, PART III., WITH OBSERVATIONS ON THE LITERATURE OF THIS BRANCH OF NATURAL HISTORY.* *By Charles Stuart Gregson.*

2nd April, 1857. ARCHÆOLOGICAL SECTION.

JOSEPH MAYER, ESQ., F.S.A., in the Chair.

The minutes of the last meeting were read and confirmed.

The following gentlemen were duly elected members of the Society:—

J. T. Towson, Esq., 47, Upper Parliament Street.
Rev. T. Newenham, B.A., Knotty Ash Parsonage.

The following donations were laid upon the table:—

From the Cambrian Archæological Association. Archæologia Cambrensis, Nos. 7 and 8, new series, for July and October, 1856.

From the United Societies of Northampton, York and Lincoln. Reports and Papers for 1850-1855.

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* Transactions, p. 165.

From the Author. A memoir on the Roman Garrison at Mancunium, and its probable influence on the population and language of South Lancashire, by James Black, M.D., F.G.S.

From the Author. A broadside letter on Roman Sepulchral Remains found in Ireland, by James Carruthers, Belfast.

From John Mather, Esq. Vols. xiii. and xiv. of Notes and Queries, also general Index for volumes i.–xii.

A pamphlet on Hyde and its neighbourhood.

Three Acts of Parliament and declaration of trust, relating to Liverpool Water Works, 1799, 1810, 1812-13.

Report on Laws relating to the Salt Duties, 1818.

A Bill for making a Turnpike road from Runcorn to Northwich, 1819.

From Joseph Mayer, Esq. The Catalogue of Works of Decorative Art selected from the Museum at Marlborough House for exhibition in Provincial Schools of Art.

From Joseph Guyton, Esq. Report on the improvement of the Rivers Mersey and Irwell between Liverpool and Manchester, 1840.

From Samuel Davis, Esq. A Bill of Lading dated 1760.

The following objects of interest were exhibited:—

By Captain Middleton. Two curious illustrated volumes relating to the Wars of the Reformation.

By Joseph Guyton, Esq. A coin found at Ribchester, a Roman Denarius of Titus.

By W. Henderson, Esq. The following ancient newspapers and other documents: *Observator*, 3 Nos., 1682; *The Tatler*, 2 Nos., 1710; *Spectator*, 3 Nos., 1712; *Old England*, 1743; *Morning Intelligencer*, 1782, 1783; *Morning Chronicle*, 1790.

A Letter from Mr. Burnett, apparently Steward to the Earl of Derby, then lately deceased, of April 30, 1703.

An Account handed in by Nicholas Fazakerley to the First Lord Molyneux, for the Easter and Trinity Terms of 1642; showing receipts for £862 4s. 2d., and disbursements of the same except £1 18s. 9d. The whole is receipted by Lord Molyneux. Among the items are several that refer to Liverpool, its leases, the petition of its people, and the patent of Charles I. to the citizens of London.

Nutter's views of Carlisle in the ancient time.

By Dr. Kendrick, of Warrington. A document entitled "Examination taken at Lancaster the 20th December, 1645, before the Committee for sequestrations there."

By Joseph Mayer, F.S.A. A large number of objects from his Museum to illustrate the paper for the evening.

The honorary Secretary read the draft of the Address to be presented to Mr. Brown, at the laying of the foundation-stone of the Free Public Library and Museum.

The Chairman announced the death, at Dublin, of Mr. J. Mitchell Kemble, the celebrated Saxon scholar. He dwelt on the regret which this had occasioned in all literary circles.

It was resolved—"That the sentiments of the Society be conveyed to the deceased gentleman's daughter."

The following Paper was then read:—

On the Faussett Collection.* *By John Robson, M.D., Warrington.*

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* Transactions, p. 85.

23rd *April*, 1857. MISCELLANEOUS MEETING.

JOSEPH MAYER, Esq., F.S.A., in the Chair.

[This meeting resembled the ordinary meetings of the Society in all except the presence of ladies, and a larger number of visitors than usual. It was like that held on the 13th of March, 1856, and referred to in the Annual Report.]

The minutes of the last meeting were read and confirmed.

The following were duly elected members of the Society.

The Earl of Burlington, D.C.L., F.R.S., Lord Lieutenant of the County, Holker, Kendal, and 10, Belgrave Square, London.

Lord Cavendish, M.P., Holker, Kendal, and 10, Belgrave Square, London.

The following donations were laid upon the table.

From the Society. The Somersetshire Archæological and Natural History Society's Proceedings, Vols. I. to VI. 1849 to 1855.

From the Society. The Quarterly Journal of the Geological Society, No. 49, Feb. 1857.

From the Society. Proceedings of the Royal Geographical Society of London, No. vii, Feb. 1857.

From the Society. Memoires de la Société des Antiquaires de l'Ouest. Vol. XXII. 1855.

From the Society. Bulletin de la Société Archéologique de l'Orleanais. No. 24, 1856.

From Rev. T. W. Banner. A political token commemorating the meeting of the allied powers in Paris, 1814, and the banishment of Napoleon Bonaparte to Elba.

By Exchange. (Mr. W. J. Herdman.) Ancient Liverpool, parts I. and II.

By Exchange. (Mr. H. Ecroyd Smith.) Reliquiæ Antiquæ Eboracences, or remains of Antiquity relating to the county of York, with illustrations by W. Bowman, Leeds, 1851. Six parts, 4to.

The following objects of interest were exhibited :—

By C. B. Worsnop, Esq. Twenty-five Photographs, by Thurston Thompson, of crystal cups from the Museum of the Louvre.

By Joseph Mayer, Esq. A great variety of Antiquities found at Hoylake.

Coins of the British period, and of the time of William III.

A vase made of clay, which had been taken from the foundations of the new Free Public Library. The workmen while excavating found an old slip-vat, the clay in which might possibly have been prepared as early as 1680. The body being of a coarse character, articles made of this clay were usually covered with a white glaze.

By Joseph Clarke, Esq., F.S.A. A glass bowl, discovered in draining a field in Essex, and exhibiting what is termed "pillar moulding," It shows that the Romans had made great advance in this manufacture. A patent for producing the same kind of moulding has been obtained at a comparatively recent date.

A glass vase also of Roman workmanship, remarkably thin and light, and evidently modelled from a pine cone; with this vase were found three Roman coins, two of Vespasian, and one of Trajan.

A small bronze figure of a youth.

A gold ring, with figure of Hercules in intaglio.

By Mr. James Boardman. (It being the anniversary of Shakspeare's birthday, as well as that of his death.) A cast of the mask of Shakspeare from the Stratford monument, coloured to imitate life, as is stated to have been the case with the origi

A medallion of Shakspeare in Wedgewood ware.
A copy of the folio edition of Shakspeare's works, printed in 1620.

The Chairman announced the death of Mr. John Mather, a member of the Council of the Society, and of Robert Bickersteth, Esq.

Resolved that their loss be recorded in the Proceedings of the Society, with suitable expression of regret.

The following papers were then read.

1. Remarks on Antique Ivory Carvings, *by Francis Pulszky, F.H.A.**
2. On the English Language, *by Thos. Wright, Esq., M.A.*†

7th May, 1857.—ARCHÆOLOGICAL SECTION.

Rev. Dr. Thom, in the Chair.

The minutes of the last meeting were read and confirmed.

The following gentlemen were duly elected members of the Society:—

W. Horner, Esq., South Castle Street.
Rev. S. S. Frackelton, B.A., Bailieborough, Ireland.

The following donations were laid on the table:—

From the Society. Transactions of the London and Middlesex Archæological Society, Vol. I. part i.

From the Archæological Institute. The Archæological Journal, Nos. 51, 52. Sep. and Dec. 1856.

From the Society. Proceedings and Papers of the Kilkenny and S.E. of Ireland Archæological Society. Vol. II. New Series. No. vi. Nov. 1856. No. vii. Jan. 1857.

From the Editor. The Archæological Mine, Part 37, 1857.

From the Author. The Episcopal and Capitular seals of the Irish Cathedral Churches, illustrated by R. Caulfield, B.A., parts 3 and 4.

From Lord Londesborough. Miscellanea Graphica, Nos. xi. and xii.

From W. Peers, Esq. The Royal Tribes of Wales, by Philip Yorke, Esq.

From Richard Watt, Esq., Speke Hall. The bowl of a tobacco pipe of the 16th century, found in the ceiling at Speke Hall, during the recent alterations.

From B. Lupton, Esq. A volume of Pamphlets relating to Liverpool and its affairs.

From George Charles, Esq. A rubbing from the tomb of Walter Balcanquhall, D.D., an eminent divine of the 17th century, who died on Christmas-day, 1645.

The following objects of interest were exhibited:—

By Joseph Clarke, F.S.A., of Saffron Walden, Essex. A collection of bells, formerly attached to the gear of horses, some of them of Roman make. A collection of keys, of various forms and ornament, chiefly mediæval, found in the county of Essex.

By Joseph Mayer, F.S.A. A great number of glass beads of various colours, forms, and sizes, showing the knowledge the Romans had of the art of glass making, and of the various ingredients requisite to give colour to the beads.

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* Transactions, p. 247. † Transactions, p. 143.

By George Grazebrook, F.S.A. The first edition of Camden's Britannia, published by Radulph Newberry, London, 1586.

By Rev. Dr. Hume. A copy of a Latin inscription made by Captain Moxon, at Malacca. Beneath the floor of a ruined Church lies buried, Peter, second Bishop of Japan, who died in February, 1597.

The Honorary Secretary announced that the Annual Excursion of the Society would be to the Art Treasures Exhibition at Manchester.

The following paper was then read:—

THE PEOPLE OF THE ENGLISH LAKE COUNTRY:* THEIR ORIGIN, HISTORY, AND CHARACTER, *by A. Craig Gibson, Esq.*

Also a portion of the following paper:—

THE HOYLAKE ANTIQUITIES, *by Rev. A. Hume, D.C.L.*†

14*th May*, 1857.—LITERARY SECTION.

J. T. DANSON, Esq., V.P., in the Chair.

The minutes of the last meeting were read and confirmed.

The following donations were laid upon the table:—

From the Royal Society of Northern Antiquaries (Copenhagen.) Antiquariat Tidscrift, &c., &c., 3 vols. 1846-48, 1849-51, 1852-54.
Memoires des Antiquaires du Nord, 3 vols. 1840–44, 1845–49.
Antiquitates Americanæ, 4to. in three languages.

From the Author. History of the Parochial Church of Burnley, by T. T. Wilkinson, F.R.A.S., 1856.

From the Author. Preston in the Olden Time, by W. Dobson, 1857, two copies.

From the Author. Table Talk in the Olden Time, by James Boardman, 1856.

From the Author. Poems Sacred and Miscellaneous, by Henry Grazebrook, Liverpool, 1852.
Sir Geoffrey and other Poems, by Henry Grazebrook, 1857.

From the Translator. Literary Fables from the Spanish of Yriarte, by Robert Rockliff, Liverpool, 1854.

From Edward Heath, Esq. Several Financial Reform Tracts.

From the Committee of the Liverpool Library. Catalogue of the Liverpool Library, complete to 1857.

From Dr. Macintyre. The Laws and Regulations of the Liverpool Lyceum Institution, as printed in the years 1807, 1849, and 1856; also a medal used for many years by members of the Society, as a token of membership.

From Mr. Angus. A photograph of the small bronze figure of a youth, exhibited by Joseph Clarke, Esq., at the last meeting of this Society.

The following objects of interest were exhibited:—

By Mr. A. Craig Gibson. An antique carving in wood, probably the lid of a chest

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* Transactions, p. 181.

† This paper will appear in an extended form, with illustrations, in the next volume of Transactions.

or trunk, representing, in the centre, the crucifixion, and round the border, in twenty-four compartments, scenes from the life of Christ.

By Mr. Joseph Mayer, F.S.A. A magnificent specimen of gold "ring money," found in Ireland. If money, it is the heaviest coin yet found, being 18 oz. 10 dwts. in weight, and worth £77 12s. of our present currency.

An indenture deed of the time of King Charles, having the name of "honest" Isaac Walton, attached as a witness.

A terrier, or account of all the lands, houses, and other property belonging to Christ Church College, Cambridge, and a MS. or vellum written about the end of the 15th century.

By Mr. D. Buxton. Two coins found at Palermo, supposed to be Saracenic.

By Mr. Blackmore. A medal of Dr. Priestley, date 1783, having his bust on one side, and a pneumatic trough and various pieces of chemical apparatus on the reverse.

Mr. Mayer exhibited a set of illustrations of gold and silver ring money, personal ornaments, and "pre-Christian" torques, all of which are in the possession of Sir Thomas Tobin, F.S.A., of Ballincollig Castle. These comprised the following :—

(1) *Bronze.* A finely patinated Brooch, from Ballitore, County Kildare.
(2) *Silver.* A Bracelet, or ring-money, from the north of Ireland.
(3) *Gold.* A Bracelet, or "ring-money," from Ahinagh, County Cork.

A "halse-ring" or collar, supposed also to have been used as ring-money. It is beautifully ornamented in front.

Five specimens of ring-money; two of which were probably used as bracelets, and the others as ear-rings.

Two "fibulæ" with broad cusps at the extremities.

Flat collar, from Bailieborough, County Cavan: engraved round both inner and outer margins with simple patterns, parallel, checked, and indented.

Large and beautiful gold torque from Mangerton, County Kerry. It is engraved on the outer and inner margins at the centre, and across the whole surface at the horns. The latter patterns are tastefully grouped, consisting of radiating bands composed of bandlets shaded alternately, and with serrated edges. The former embrace indentations, checks, parallel waves, &c., in great variety.

[*See the four plates subjoined.*]

The following papers were then read.

An Historical Sketch of the Liverpool Library,* *by P. Macintyre, Esq., M.D.*

The Growth of the Population of Lancashire during the Fifty Years, 1801 to 1851, † *by J. T. Danson, V.P., and T. A. Welton, Esqrs.*

21*st May*, 1857.—SCIENTIFIC SECTION.

T. Sansom, Esq., A.L.S., in the Chair.

The minutes of the last meeting were read and confirmed.

The following gentlemen were duly elected members of the Society :—

Edward Bean, Esq., Revenue Buildings.
John Cheetham, Esq., M.P., Eastwood, Staleybridge.
F. A. Clint, Esq., 14, Dale Street, and 2, Beech Terrace.
Hon. Sir Cresswell Cresswell, 21, Prince's Gate, London.

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* Transactions, p. 235. † Transactions, p. 195.

GOLD RING MONEY.
Wt 26 dwts. 20 grs.
Found 7th June 1850.
At Ballylesdinish, near Dunmanway, Co. Cork 1850.

Wt 5 dwts. 19 grs.

GOLD FIBULÆ.

Found July 1856
in draining a field near Ballyborough,
Co. Cavan, Ireland.

Wt 1 oz. 8 dwts.

Wt 12 dwts. 4 grs.

Wt 6 dwts. 4 grs.

Wt 2 dwts. 10 grs.

GOLD RING MONEY.

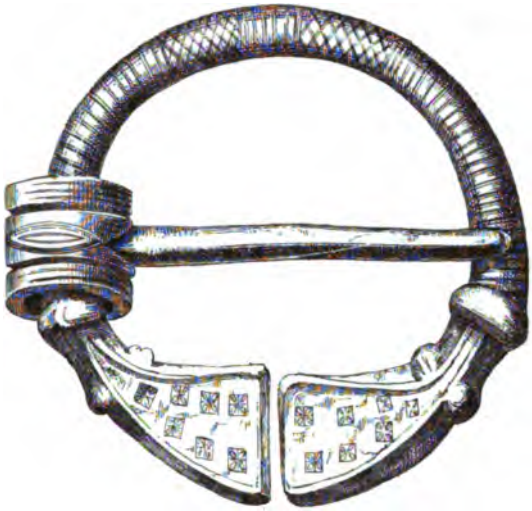
GOLD RING MONEY,
Wt 2 oz. 1 dwt.
Found at Ahinagh, near Macroom, Co. Cork, 1848.

SIZE OF ORIGINALS.

In the possession of SIR THOMAS TOBIN, F.S.A.
Ballincollig, near Cork.

SIZE OF ORIGINALS.

In the possession of SIR THOMAS TOBIN F.S.A.
Ballincollig, near Cork.



Finely Patinated
BRONZE BROOCH.
Found July 1856,
Near Ballitore, Co. Kildare.

SIZE OF ORIGINALS.

In the possession of SIR THOMAS TOBIN, F.S.A.
Ballincollig, near Cork.

Charlton R. Hall, Esq., 40, Everton Terrace.
Francis Haywood, Esq., 7, Exchange Buildings, and Edge Lane Hall.
Lewis Hornblower, Esq., Clarendon Buildings, South John Street.
Hamilton Hume, Esq., Cooma, Yass, New South Wales.
James R. Jeffery, Esq., 43, Church Street, and 11, Lodge Lane.
Joseph Kitchen, Esq., Exchange Court, Exchange Street East.
Charles Mozley, Esq., 125, Mount Pleasant.
David Hudson M'Nicoll, M.D., Southport.
A. C. Stewart, Esq., Union Buildings, 16, North John Street.
John Angus Ward, Esq., Hooton Lodge, and Water Street.

Samuel Hill, Esq., was re-enrolled a member on paying his subscription from the time of his temporary withdrawal from the Society.

The following donations were laid upon the table:—

From the Society. Proceedings of the Royal Society, Vol. VIII. No. 25.

From the Society. Proceedings of the Royal Geographical Society, No. viii. March, 1857. Journal of the Royal Geographical Society, Vol. XXVII. 1856.

From the Society. The Quarterly Journal of the Geological Society, Vol. XII. part 4, 1856.

From the Society. Journal of the Geological Society of Dublin, Vol. XII. part 3, 1856.

From the Society. Transactions of the Dublin University Philosophical Society, Vol. VI. 1854.

From the Society. Transactions of the Cambridge Philosophical Society, Vol. IX. part 4.

From the Society. Proceedings of the Liverpool Architectural and Archæological Society, Vol. II. part 2.

From the Society. Report of the Liverpool Royal Institution, 1857.

From the Town Council of Liverpool. Report on the Police Establishment and the state of crime in Liverpool, with tabular returns for the first nine months of 1856-1857.

From T. T. Wilkinson, F.R.A.S. The Ladies' and Gentlemen's Diary, or Poetical and Mathematical Almanack for 1857.
On the origin and investigation of Porisms, by Mr. John Playfair, Edinburgh.

From Mr. Keith. Six Photographs commemorative of laying the foundation-stone of the New Free Public Library.

By Exchange. (Mr. Herdman.) Ancient Liverpool, part III.

The following objects of interest were exhibited:—

By Joseph Mayer, F.S.A. A gold ring, found in digging about the roots of a plum tree at Hoylake. It is of the time of Elizabeth, and set with a diamond of the pyramidal form, common at that period. Inside the ring the following letters are engraved, S. T. D. Æ.

By Edward Benn, Esq. Four daggers made of bronze, one of steel, and a stone implement supposed to have been used for making nets; also a karrane or shoe, made of a plain piece of leather sewn up the front and back so as to fit the foot.

By George Grazebrook, F.S.A. Two illuminated missals, one of the early fifteenth and the other of the end of the same century.
Several bronze and silver mediæval seals.

By Miss Head, Bootle. Howell's History of the Bible, printed at Manchester in 1738, and containing several plates.

By Mr. Henderson. A Spanish Bible, printed in 1569. A presentation copy from the translator, Cassiodorus Reimus, 1588.

By Mr. James Reay. Preston in the Olden Time, by W. Dobson, 1857.

By Mr. James Boardman. Mementos of Roscoe. 1. View of Old Bowling Green House. 2. New Bowling Green House. 3. Allerton Hall.

By Mr. Keith. A miniature photographic copy on glass of six 4to. pages of writing, being a paper read before the Photographic Society.

The papers for the evening were:—

1. A Visit to the Tomb of Theodoro Paleologus,* *by J. T. Towson, Esq.*

2. The Characters of Macbeth and Richard the Third, according to Shakspeare, compared,† *by James Stonehouse, Esq.*

3. On the Perfect r–Partitions of r^2-r+1,‡ *by Rev. T. P. Kirkman, A.M., F.R.S.*

4. Address at the Close of the Third Triennial Period of the Society's Existence, *by Rev. A. Hume, D.C.L.*

Concluding Address. *By the Rev. A. Hume, D.C.L., Honorary Secretary.*

In complying with the request of the Council, to address to you a few remarks at the close of another Session, my task is on the whole an easy and agreeable one. I might quote the proceedings, not yet closed, of this very evening; probably without a parallel at any time in the two counties. On this last evening of the Session, we elect fourteen new members, one of whom has read our Transactions with interest at the Antipodes; and we restore another to the roll who will thus obtain the volumes for Sessions VIII and IX. New donations come in to the last moment, and numerous objects are forwarded to us for exhibition. We have four papers also;—one on Archæology, one on Literature, one on Science, and one of a miscellaneous character. Of the writers, two are members of the Society and two are not.

There have been eighteen Sectional meetings, two Miscellaneous, and the Annual General meeting,—in all twenty-one. At these twenty-nine papers have been read;—eight on Archæology, nine on Literature, nine on Science, and three of a miscellaneous character. The authors have been twenty-four in number; of whom it is interesting to see that so many as one-third are unconnected with the Society; while of the remaining two-thirds, fourteen are ordinary and two honorary members. The papers have been in general of a higher character than usual; so that the Council will feel some difficulty in doing justice to all, and yet restricting their volume within convenient limits.

The donations received during the Session have made some interesting and valuable additions to both portions of our collection. The most interesting of the miscellaneous objects by which our Museum has been enriched, is the large and beautiful guidon presented by Mr. French of Bolton. The gift was suggested on the occasion of our Excursion to Preston last summer; and on all future occasions of that kind, it will be a becoming and characteristic object. Our Library has been increased by about one hundred volumes of donations, so many as seventy being from other learned Societies with which we maintain friendly relations. The continuous portions of such publications, and the separate pamphlets received, would be equivalent to about twenty volumes more.

In connexion with this subject it may be noticed that the Catalogue of our collection, extending over thirty-six pages, has been printed and issued; and that a large number of volumes has been bound and put in perfect order. The whole collection is at present accessible to the members. Hitherto, the collection has not been a very important feature of the Society, but the intention is that it shall be so. With a due amount of attention and care, its value may increase very rapidly.

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* Transactions, p. 213. † Transactions, p. 227. ‡ Transactions, p. 127.

The number of members added to the roll during the Session, including this evening, is a satisfactory evidence of the firm position which the Society has already attained. At the commencement of the Session, I ventured to anticipate an increase of forty to supply the usual vacancies and to add to the standing number; and my expectations have been much more than realised, as we have enrolled sixty-three. These include the Lord-Lieutenant of the County, a Bishop, a Judge, several members of Parliament, and others of distinction for their social position, public usefulness, or high attainments. Viewed locally, twenty-nine are resident, and thirty-five non-resident. So many as fifty-nine were elected in the usual way; three were enrolled without election or entrance fee, as they had been Vice-Presidents by right of office; and two who had resigned were restored again, each paying his subscription from the point at which he had left off.

To place this number in its proper light, it ought to be stated that learned Societies have at several times existed in Liverpool whose entire members have not reached sixty-four. Yet they did not profess to be private clubs; but claimed attention as institutions with public characters and objects. The oldest Society in the town had only fifty-six members during its first session; it was occupied nearly eighteen years in enrolling sixty-four new members; and it was about twenty sessions old before its entire list comprised that number.

During the past Session, the Society gave expression to its views in reference to the munificent offer of an individual to present a Library and Museum to the town; and the President and members had the gratification to see that the mode in which they expressed their sentiments was adopted by several other public bodies. Perhaps I may be allowed to say in connexion with this subject, that I had the honour to advocate the establishment of a public Library in Liverpool on the 1st of February, 1848;—more than two years before Mr. William Ewart's first Bill on the subject had passed, and two years and a quarter before the first motion on the subject had been made in the Town Council.

The results of a single Session, however, though gratifying as in the present instance, must be expected to be generally uniform, and therefore seldom presenting points of peculiar interest. A provincial Society, cultivating the whole field of intellectual inquiry, cannot be expected to give an annual statement of the position of knowledge in its several departments; especially as there are Metropolitan Societies which do that work specially and in detail. And on the other hand, a mere analysis of the papers read would be comparatively useless; for any intelligent reader can see it for himself, at a glance, in the Table of Contents. At the present moment, however, we have reached the close of another triennial period; and it is in recollection of the more formal statements delivered on two previous occasions, that these remarks have been requested by the Council.

During three Sessions we have existed in our enlarged condition; during that time only have we practically cultivated science; or worked in sections; or made a distinction between resident and non-resident members; or met within these walls; or published an enlarged volume; or made its annual issue indispensable; or cultivated extended relations with other Societies. At the close of the sixth Session, there were 340 members connected with the Society, at the close of the ninth there are about 470. At that time, the idea of a large Society working in sections was considered practicable, provided two or more of the existing ones united to form its nucleus; the plan is in successful operation at this moment, from our own materials exclusively. We ventured then to hope that a Society with 500 members might eventually be called into existence; we now know, that whenever we consider the effort worth being made, we can raise our own Society to 500 in a single Session.

From the first hour, our Society included Scientific subjects, but only so far as they applied to the district. Indeed it only included Literature and Archæology to the same limited extent; but as the laws of nature and their application in the arts, have generally very little of a local application, in practice we declined papers on Science in favour of those Societies which gave it more prominence. This led to several erroneous inferences, e.g. that the Society was for six years merely Archæological, (in theory as well as in

practice), that we had no Scientific members, and that our attempts in that section would be unsuccessful. The following analysis, therefore, is not without interest to the members. During the three Sessions, we have had twenty-six papers in the Section of Science; and of these, six have been on Zoology, two on Botany, one on Physical Geography, four on Practical Mechanics, one on Geology, three on Mathematics, four on Meteorology in theory and practice, two on Optics, two on the higher department of Ethnology, and one on the application of Chemistry to the Arts. The papers on Archæology and Literature have also been very varied, but they need not be examined so minutely.

It is proper to state, however, that our position is not one of our own seeking; but that the result was brought about by causes external to us. To these it is now unnecessary to allude. We believed, naturally enough, that in a town where a Learned Society,—using the term in a high sense,—had scarcely existed, a union of existing elements was indispensable to success; but the result has shown that this was a mistake. In the triennial addresses delivered in 1851 and 1854, the propriety of this course was suggested; but the question has now been set at rest, in a manner most satisfactory to us. Farther, it can never be re-opened on the same grounds;—for the end has been gained already, and the proposed means are therefore obsolete.

In short, our duties are now clearly defined; we have an ample supply of competent labourers; our detailed operations have in almost everything assumed a permanent form, to constitute future precedents; and our means are amply sufficient to secure the ends. A Society in this condition, and able in an ordinary Session to enrol 63 desirable members, has little to fear if it be only true to its great principles and declared objects.

APPENDIX.

27th *November*, 1856. EXTRA MEETING.

Conversazione at the Egyptian Museum, Colquitt Street.

By the invitation of the proprietor, Joseph Mayer, Esq., F.S.A., an extra meeting was held here, when a large number of members and their friends attended.

The Company were received in the room devoted to Anglo-Saxon and Medieval Antiquities; they then partook of coffee and other refreshments, and were afterwards conducted to the Mummy Room.

Here Mr. Mayer gave a brief account of embalming, and pointed out the chief objects in the collection. In respect to the Egyptian remains he observed, that a singular and interesting feature of their antiquities was to be found in the similarity of the emblems and devices by which the mummy cases were ornamented. These similarities are to be observed historically until the Egyptians ceased to be a nation. After the Greeks occupied the country their forms of monumental decoration were mixed with the Egyptian; but to all scholars it was obvious how small and how slow were the adaptations of Greek forms. The Greek innovations were traceable in a changed method of embalming, but still the strongly-marked peculiarities of Egyptian art and feeling maintained their supremacy. Another remarkable feature connected with Egyptian Archæology, is the absence of early pottery. It is true that specimens of pottery are sometimes found, but none showing a rude state of the potter's art. The commoner vessels in use in Egypt were made of alabaster; those of pottery which have reached us are of a very advanced character. The evidences of their skill in working alabaster, are numerous, and interesting.

Mr. Mayer then conducted his guests to the room containing Egyptian, Greek, and Etruscan personal ornaments and jewellery. This collection is particularly rich, and by reference to particular specimens, the various stages of progress in the glyptic art were illustrated.

After the rooms containing the Saxon collection, (known as the Faussett collection,) had been visited, and its contents explained, the company were taken through the valuable and extensive collection of Etruscan and Roman pottery, and thence into the Amoury, and to the room devoted to the exhibition of modern porcelain. In this last there is a large collection of Raphael ware, with specimens of all the manufactories of porcelain in Europe, from the discovery of the art to the present time, and of what to an English eye is even more pleasing, the triumphs of Wedgwood in the ceramic art. Here are specimens of all the stages by which that eminent manufacturer arrived at perfection, from the inimitable jasper panels, enriched with classic cameos, to the matchless copy of the Portland vase. Mr. Mayer, in describing this celebrated model, corrected the common impression that Flaxman had been employed upon it, and stated that he had documents in his possession in proof that the artist was named Hackwood. Before leaving this department, he contrasted the different circumstances under which the Sevres porcelain and that of Staffordshire were produced. The one is well made, and ornamented in a manner to meet the eye of the most fastidious, and yet at a comparatively small cost; the other from its great expense is only to be purchased by princes. In connexion with this subject, he remarked that Liverpool held an early and honourable position. In fact, here the art of Pottery first developed itself, and was carried to a very high state of perfection. Here porcelain was first made in England, and the art of ornamenting it by the aid of copper-plate printing first known; and here the best and earliest encaustic tiles

were made. Up to the period when Minton did so much to advance this branch of the art, nothing had been achieved equal to the Liverpool manufacture. At Herculaneum also, in this immediate neighbourhood, excellent pottery had been manufactured.

The entire company having descended to the reception room, Mr. Mayer expressed before their departure, the great pleasure which he experienced in having the members of the Society present with him, as his guests and fellow-students of antiquity.

Dr. Robson complimented Mr. Mayer on his liberality, and the taste he had displayed; and concluded by proposing the thanks of the gentlemen present.

Dr. Hume, especially on behalf of the Historic Society, seconded the motion which was at once adopted unanimously;—and the meeting separated.

4th December, 1856.—SPECIAL GENERAL MEETING.

J. Towne Danson, F.S.S., V.P., in the Chair.

(Held half an hour before the usual Ordinary Meeting.)

The Chairman stated the object of the Meeting, and read the notice convening it.

Mr. Mayer proposed that a Diploma of Life Membership be presented to David Thom, D.D., Ph.D., in acknowledgment of his long connexion with the Society as a Vice-President, and an active member of the Council since its commencement.

Dr. Hume seconded the proposition, and mentioned some particulars of Dr. Thom's interest in the Society.

After some remarks from Mr. Peter R. M'Quie, Dr. Macintyre, and the Chairman, the Resolution was put and adopted unanimously.

15*th April*, 1857. SPECIAL GENERAL MEETING.

A Special General Meeting of the Society was called for the purpose of presenting an address to William Brown, Esq., M.P., at the usual place of meeting, in St. George's Hall, on the morning appointed for laying the foundation-stone of the Free Public Library and Museum.

It was afterwards arranged to present the address at the Town Hall; where the Society attended in its official capacity. This arrangement was adopted for the public convenience; as other public bodies were desirous to present Addresses at the same time. An elevated dais was occupied by Samuel Holme, Esq., deputy Mayor, and William Brown, Esq., M.P. The various Deputations were introduced by James A. Picton, Esq., F.S.A., Chairman of the Library and Museum Committee;—the Historic Society being first in order.

The President, Major-General the Hon. Sir Edward Cust, K.C.H., D.C.L., commenced the proceedings with some remarks in reference to the occasion of the meeting and the general business of the day, and then called on the hon. Secretary, Dr. Hume, to read the following:—

Address

"To William Brown, Esq., M.P.

Sir,

You this day lay the foundation stone of a building, to be devoted to a Free Public Library and Museum; and you have also, with a spirit worthy of so good a cause, signified your intention to erect it exclusively at your own cost.

We might, on *general* grounds, congratulate the public and ourselves as the recipients of such a noble gift; and any body of men might, with much propriety, tender to you their grateful acknowledgments. But the Members of the Historic Society of Lancashire and Cheshire feel that they have a peculiar right to do so. It is their pleasing duty to record facts of interest respecting this part of the country, and to cultivate an extended intellectual spirit; their meetings are held within the walls of St. George's Hall; the Society has itself collected a Library and Museum for the use of its own members; and a place of deposit has been promised for this collection as soon as sufficient space can be spared in the public Museum of the town.

It affords the highest gratification to every person in this great community, to see one of its members spontaneously producing from his abundance such a valuable and suitable offering for the benefit of the public at large. It is particularly gratifying to this Society, that one who has been enrolled among its members from the first, and who occupies a prominent official place within the area of its operations, should afford such material aid to the intellectual objects which it labours to promote. Nor can it be less satisfactory to yourself, to witness the high appreciation of your generous conduct, as evidenced by the enthusiastic and grateful recognition of all sections and grades of society.

We regard the principal ceremony of this day, as initiatory in more senses than one. We trust that it will induce many others of our "Merchant Princes" to emulate so good an example; and we rejoice to see facilities for completing the education of our ordinary schools, as well as for carrying general intelligence to lower grades of the community. We foresee, in the new erection, the appropriate home of some of our Societies and Institutions, for Literature, Science, and the Arts; and we look forward with hope to its affording valuable aid towards a higher class of Education than any that Liverpool yet posseses.

May you be spared to witness length of years and years of happiness, and to see amid the praise and honour of young and old, the valued fruits of the beautiful tree which you this day plant among us."

Reply

"To the Members of the Historic Society of Lancashire and Cheshire.

Gentlemen,

So totally unexpected are the honours which my fellow-townsmen are conferring on me,—for my desire in some slight degree to aid and promote their onward progress in acquiring knowledge of the useful arts of life,—that it exceedingly embarasses me to find suitable language to express my feelings; particularly to the Historic Society, of which I have been, I fear, an unworthy member.

My only apology is, that I have not time at my command, or that knowledge which would enable me to make myself useful in fishing the inexhaustible preserves of antiquarian lore which is so extremely useful in verifying and correcting many important parts of History. Therefore, all I can do is to try to mend, and extend the net in some slight degree; that you may have a greater power of withdrawing more and more from those preserves, the treasures which they yet contain. In this duty I consider that we are all called upon to assist.

No one can appreciate more than I do your useful labours,—in all your three chosen lines of inquiry, Archæology, Literature, and Science,—and I can assure you that I am much gratified at your desiring to present me such an address, couched as it is in language most flatteriug.

To be considered the associate of such a Society gives me position and rank amongst my fellow-men, and this is a great stimulus to make myself worthy of such a position.

Gentlemen, permit me, in conclusion, to thank you sincerely for the honour you have conferred upon me."

[Both the Address and Reply were beautifully emblazoned on vellum, and mounted in handsome frames. The latter is preserved in the Society's Library.]

27th *June*, 1857. SPECIAL GENERAL MEETING.

Excursion to Manchester.

On Friday the 27th of June, the Annual Excursion of the Members and their friends took place, to the Art Treasures Exhibition at Manchester. The party, which consisted of about 200 gentlemen and 100 ladies, left Liverpool at half-past nine a.m., and proceeded by Birkenhead Chester and Warrington.

At the entrance to the Exhibition, they were met by several other members, resident in Manchester and the neighbourhood; and for about two hours the party separated into numerous private groups for the more convenient examination of different portions of the Exhibition. After one o'clock, a large number were conducted through the Gallery of Paintings by Ancient Masters, and the principal characteristics were pointed out by George Scharf, Jun., Esq. Conversational explanations were also given to similar parties, in the Gallery of Modern Portraits, by James Crossley, Esq., F.S.A., and in the department of Antiquities, by Mr. Chaffers, Mr. Mayer, and Dr. Bell.

At half-past three, about 250 sat down to dinner, in an apartment which had been specially screened off for the purpose. The Chair was taken by the Rev. A. Hume, D.C.L., Honorary Secretary. The principal table was also occupied by the Lord Bishop of Manchester, William Fairbairn, Esq., F.R.S., Rev. Thomas Corser, M.A., Colonel Hamilton, George Scharf, Jun., Esq., Professor Crace Calvert, Joseph Mayer, Esq., F.S.A., Mr. Chaffers, &c. Several sentiments, having special reference to the intellectual progress of Lancashire and Cheshire, were proposed and suitably acknowledged. The company broke up soon after five o'clock, and left the Exhibition by the returning train at seven.

25th *July*, 1857. SPECIAL GENERAL MEETING.

Visit of the Archæological Institute.

[The Archæological Institute of Great Britain and Ireland held its Annual Meeting this year at Chester, from Tuesday the 21st till Wednesday the 29th July. On the invitation of the Council of the Historic Society, the Members and Associates resolved to visit Liverpool on Saturday the 25th.

The party from Chester, including Lord Talbot de Malahide, and comprising about seventy ladies and gentlemen, arrived at the Landing-stage a few minutes before eleven. Here they were joined by the Council of the Historic Society, who were to direct them in the arrangements of the day; and conducted on board the Satellite steamer, which had been placed at their disposal by the agents of the Cunard Company. The whole party then enjoyed a pleasant sail up the river, during which time the juvenile band of the Orphan Boys' Asylum played several airs.

Arriving at the Garston Docks, carriages were waiting to convey the ladies and gentlemen to Speke Hall, which they had been invited to visit by the proprietor, Richard Watt, Esq. After about an hour spent in examining its architectural peculiarities and antique furniture, they were summoned to a spacious marquee erected on the lawn, where an elegant *déjeuner* was provided. After returning to Garston by the same carriages, and re-embarking, the Satellite proceeded to visit the United States' Frigate Niagara; and by the permission of Captain Hudson and the officers, the Atlantic Telegraph Cable and the arrangements connected with it were examined.

On arriving in Liverpool, some of the party visited St. George's Hall, under the guidance of John Woodruff, Esq.; others Mr. Mayer's Museum, through which they were conducted by the proprietor; and the remainder the Sailors' Home, which was described by J. T. Towson, Esq. A reception-room had been provided at the Adelphi Hotel, which was regarded as the point of reunion; and here a collation was in readiness at half-past five.]

At eight o'clock, a Special General Meeting of the Society, in the form of a Conversazioné, was held in the apartments of the Town Hall. These, including lights, had been placed at the disposal of the Society by the Worshipful the Mayor, V.P., *ex officio;*

and the subsequent arrangements were made by the Society. The company in attendance amounted to abont 1,000.

The lobbies were decorated with rare green-house plants from the Botanic Garden, and from the orchestra in the large ball-room the banner of the Society was suspended. In other parts of the building, various objects of interest were exhibited. These included models of the proposed approaches to St. George's Hall, model of the Ripley Institution, Lancaster, various architectural drawings and models, curious specimens of naval architecture, a series of Shaksperian characters designed for stained glass, specimens of stained glass, rare illustrated books, illuminated manuscripts, microscopes, stereoscopes, philosophical apparatus, and photographs.

About half-past nine the refreshment-room was thrown open; and J. T. Danson, Esq., V.P., expressed on behalf of the Historic Society the official welcome which they gave in open meeting, to their guests and fellow-labourers. He concluded by proposing "The Health of Lord Talbot de Malahide, and success to the Archæological Institute of Great Britain and Ireland." His Lordship after suitable acknowledgments, proposed "Prosperity to the Town of Liverpool," and subsequently "the Historic Society of Lancashire and Cheshire."

Shortly before the visitors from Chester retired, Mr. Mayer, the Honorary Curator, presented to Lord Talbot, on behalf of the Society, a beautiful maser bowl. It was made from part of the timber of Prince Rupert's cottage; was inlaid with silver; and surmounted by a suitable inscription. The latter, after expressing his thanks, called for wine, and drank from it for the first time to the sentiment, "The Lancashire Witches."

At eleven o'clock, the military band in attendance played the National Anthem, with which the meeting terminated.

INDEX.

A

Address, opening, 266; concluding, 292; to Mr. W. Brown, 284, 296
Aims of Historic Society, 267
Ancient Britons, their dwellings described, 66
Annual accession of members, 262; expenditure, 261, 263; general meeting, 259; excursion, 289
Anglo-Saxon, distinction in meaning of, 145; language complicated in grammatical forms, 146; constantly changing, 146; superseded a latin dialect in England, 147; changes in it produced by Norman conquest, 149; revival of in 13th century, 149; becomes the language of the aristocracy, 150, 151; how it became enriched with synonyms, 152; obsolete Saxon words retained by the peasantry, 155 to 160; reappearance of old Saxon words in 14th century, 161; changes in the 16th century, 163
Anglo-Saxons, great eaters, 71; their early condition inferred, 97
Angus, Mr., donor, 289
Ansdell, John, enrolled a member, 274
Arabia comparatively unknown to commerce, 119
Argali-sheep described, 55
Archæological Institute, meeting of at Chester, 279, 282; local committee for, 282; visit of to Speke Hall and Liverpool, 298
Arms of Nicholas Lower, 216; Theodoro Paleologus, 216; canting arms, 279
Appendix, 295
Athelstan, battle by, 25; his prayer before battle, 28
Authors of Papers.
  Buxton, David, 77, 275
  Clibborn, E., 271
  Danson, J. T., 195, 266, 290
  Gibson, A. C., 181, 285, 289
  Grazebrook, G., 280
  Gregson, C. S., 165, 285
  Hartnup, John, 11, 279
  Hume, Rev. Dr., 262, 289, 291, 292
  Kirkman, Rev. T. P., 127, 291
  Latham, R. G., 1, 278
  Locke, John, 119, 283
  Macintyre, Dr., 235, 290
  Moore, T. J., 43, 276
  Newton, J., 272
  Parks, Lieut. M. T., 223, 284
  Pulszky, Francis, 245, 288
  Ramsay, Rev. A., 105, 282
  Robson, Dr. J., 85, 281
  Stonehouse, James, 227, 291
  Thornber, Rev. W., 61, 277, 284
  Towson, J. T., 213, 291
  Welton, T. A., 195, 290
  Wilkinson, T. T., 21, 99, 275, 276
  Wright, Thomas, M.A., 143, 288
Azimuth card exhibited, 279

B

Banner, Rev. T. W., donor, 287
Barker, G., Librarian of Liverpool Library, 238
Barometer at Liverpool, observed by Mr. Hartnup, 223; maxima and minima of, 226
Battle of Brunanburh, 21, 275; site of, 28, 284
Bean, Edward, enrolled a member, 290
Bede, extracts from, 7, 8, 70
Bells for horses, Roman, 288
Benn, Edward, exhibitor, 291
Bickersteth, Robert, decease noted, 288
Binaural hearing, 274
Binocular Vision and the Theory of the Stereoscope, 272
Broughton, Frederick, enrolled a member, 274
Black, Dr., donor, 286
Blackmore, W., exhibitor, 285, 290
Boardman, James, exhibitor, 265, 282, 287, 291; donor, 278, 289
Booth, Rev. Dr., donor, 275
Boult, Joseph, donor, 278
Brakesbourne, an ancient burial ground, 89
Britain occupied by Teutonic races, 144
British Association, thanks to, 264
Brown, Robert, enrolled a member, 275
Brown, W., M.P., address presented to, 284, 295
Browne, G. Mansfield, donor, 265
Burlington, Earl of, enrolled a member, 287
Burnley, the site of the battle of Brunanburh, 30; Saxon fortifications in the neighbourhood of, 32
Burrhel-sheep described, 57
Buxton, David, exhibitor, 266, 290; paper by, 77, 275

C

Campbell, Captain, enrolled a member, 276
Carr, Thomas, enrolled a member, 283
Carruthers, James, donor, 286
Cartwright, Samuel, enrolled a member, 276
Castercliffe described, 32; burnt stones from, 277
Castle-hill of Penwortham, 61
Carvings, antique ivory, 245
Catalogue of Library and Museum, 259, 266, 283, 292
Catalogues of Liverpool Library, 237, 289
Catlow, funeral urns found at, 41
Caulfield, R., donor, 288
Cavendish, Lord, enrolled a member, 287
Chairmen at Ordinary Meetings.
  Buxton, D., 270, 284
  Danson, J. T., 265, 274, 278, 282, 285, 289
  Gath, S., 259
  Howson, Rev. J. S., 283
  M'Quie, Peter R., 275, 279
  Mayer, Joseph, 271, 285, 287
  Poole, John, 278
  Ramsay, Rev. A., 281
  Robson, J., M.D., 276
  Sansom, T., 276, 290
  Thom, Rev. Dr., 288
Character of the people of the English Lake Country, 181

Characters of Macbeth and Richard III., compared, 227
Charles, George, donor, 288
Cheetham, John, enrolled a member, 290
Cheshire, population of, 195
Chester, map of, 277
Chester, meeting of Archæological Institute at, 279, 282, 298
Chorlton, rapid increase of population in, 202
Chronology, Roman, 248
CHRONOMETERS, IMPORTANCE OF TESTING THEM BEFORE THEY ARE USED AT SEA, 11
——— how their faults may be detected, 11; how tested at Liverpool Observatory, 11, 17; in London, 17; and in New York, 19; effect of change of temperature upon, 15, 18; rates may be equal in two temperatures but not in three, 16; effect of thickening of the oil in, 16; improvements in compensation balance, how tested, 18
Clarke, Joseph, exhibitor, 287, 288
Clay from foundations of New Free Public Library made into an urn, 287
Clibborn, Edward, paper by, 271
Clint, F. A., enrolled a member, 290
Coin of Roman Republic exhibited, 266
Coins found at Highlaw, 35; at Cuerdale, 40; at Walton, 68; at Whittle, 68; near Cartmel, 76
Coins in the Faussett collection, 93
Corser, Rev. T., enrolled a member, 276
COMMERCE OF THE MEDIAL EAST, 119
Commerce aided by Science, 270
COMPARATIVE PHILOLOGY CONSIDERED AS AN AID TO HISTORY, 105
——how to be employed, 109
Condition of the Anglo-Saxons inferred, 97
Council, list of, 6; vote of thanks to, 204
Courtnays of Powderham, their connexion with Byzantine history, 214
Conversazione at the Egyptian Museum, 295
——— at the Town Hall, 298
Cowley, extracts from, 81
Cranage, Dr. E., enrolled a member, 275
Cresswell, Sir C., enrolled a member, 290
Crory, W. G., enrolled a member, 274
Crosses in the Faussett collection, 94
Croxton, Thomas, enrolled a member, 271
Cuerdale find of coins, 40, 284
Cust, Sir Edward, address presented by, 296

D

Danish origin of people of the lake district, 183
Danson, J. T., address by, 266; donor, 282, 283, paper by, 195, 285, 289
Davies, S., donor, 286
Density of population considered in defining town districts, 199
Diplomas unclaimed, 266
Diptycha, use of, 247, 248; consular, 248; used as presents, 249; list of, 18, 250; description of some in possession of Mr. Mayer, 251, 256
Dobson, W., donor, 283, 289
DONORS. (General.) *London.*—Archæological Institute, 283, 288; British Archæological Association, 279; Ethnological Society, 284; Geological Society, 278, 287, 290; London and Middlesex Archæological Society, 288; Numismatic, 283; Philogical, 278; Royal, 285, 290; Royal Asiatic, 275; Royal Astronomical, 271, 275; Royal Geographical, 278, 284, 287, 290; Statistical. 271, 284
Provinces.—Cambrian Archæological Association, 285; Cambridge Antiquarian Society, 275; Cambridge Philosophical Society, 291; Leeds Literary and Philosophical Society, 278; Manchester Literary and Philosophical, 271; Northampton, York, and Lincoln, United Societies of, 285; Somersetshire Archæological and Natural History Society, 287; Sussex Archæological, 277; Yorkshire Geological and Polytechnic Society of the W. Riding of, 285
Liverpool.—Chemists' Association, 271; Literary and Philosophical Society, 281; Architectural and Archæological Society, 291; Liverpool Library, 289; Royal Institution, 291: Philomathic Society, 275; Polytechnic Society, 282; Town Council, 291
Scotland.—Royal Society of Edinburgh, 276.
Ireland.—Dublin University Philosophical Society, 291; Geological Society of Dublin, 291; Kilkenny and South East of Ireland Archæological Society, 277, 288.
Foreign.—Royal Society of Northern Antiquaries, Copenhagen, 289; Société Archéologique, de l'Orleannais, 287; Société des Antiquaires, de l'Ouest, 287.
DONORS. (Individual.) Author unknown, 271; Angus, Mr., 289; Banner, Rev. T. W., 287; Black, Dr., 286; Boardman, J., 278, 289; Booth, Rev. Dr., 275; Boult, Joseph, 278; Browne. G. M., 265; Carruthers, James, 286; Caulfield, R., 288; Charles, George, 288; Danson, J T., 282, 283; Davis, S., 286; Dobson, W., 283, 289; French, Gilbert Jas., 265, 284; Gibson, A. C., 284; Grazebrook, G., 282, 283; Grazebrook, Henry, 289.; Guyton, Joseph, 286; Heywood, James, 282; Heath, Edward, 289; Heaton, Mrs. A. M., 265, 277; Hinde, J. H., 277; Hume, Rev. Dr., 285; Johnson, Mr., 281; Keith, Mr., 291; Kingsmill, Henry, 265; Lamb, D., 281; Lindsay, John, 265; Londesborough, Lord, 274, 283, 288; Lupton, B., 288; M'Quie, Peter R., 265; Macintyre, Dr., 289; Mather, John, 286; Mayer, Joseph, 265, 283, 286; Newlands, James, 284; Ormerod, George, 271, 277; Peers, W., 288; Perthes, B. de, 281; Pycroft, J. W., 283; Reay, James, 291; Rhind, H. H., 265; Rockliff, Robert, 289; Robson, T. J., 275; Rundell, W. W., 276; Ryder, T. B., 283; Sainthill, R., 265; Smith, Charles R., 274; Thompson, Dr. D. P., 275; Towson, J. T., 291; Tudor, R. A., 265; Varty, T., 284; Watt, Richard, 288; Way, Albert, 272; Wedgwood, T. G., 283; Whitehead, J. W., 281; Wilkinson, T. T., 275, 277, 289, 291.
Driffield, Walter W., enrolled a member, 274

E.

Eaton, F. J., enrolled a member, 276
Ellesmere, Earl of, notice of death, 283
Eminent men belonging to the English lake district, 193
English lake country, population of, 181
ENGLISH LANGUAGE, HISTORY OF, 143
English Poetry, Resemblance, Imitation, and Plagiarism in, 77
Evans, Eyre, exhibitor, 282.
Evans, Robert, enrolled a member, 274
Everard, W., a Liverpool mathematician, 236; first librarian of Liverpool Library, 237
Europeans, capital and labour of, in America, 271
Examples of mode of testing chronometers, 12
EXHIBITORS.—Benn, Edward, 291; Blackmore, W., 285, 290; Boardman, James, 265, 282, 287, 291; Buxton, David, 266, 290; Clarke, Joseph, 287, 288; Evans, Eyre, 282; Gibson, A. Craig, 285, 289; Grazebrook, George, 282, 289, 291; Gregson, C. S., 285; Guyton, Joseph, 286;

Hartnup, John, 272; Head, Miss, 291; Henderson, W., 286, 291; Howson, Rev. J. S., 283; Hume, Rev. Dr., 266, 271, 272, 275, 277, 278, 279, 289; Keith, Mr., 291; Kendrick, Dr., 286; Leyland, Mr., 276; Lingard, A. R., 279; M'Quie, Peter R., 271, 277; Macintyre, Dr., 275; Marshall, Thomas, 275; Mayer, Joseph, 277, 282, 286, 287, 288, 290, 291; Middleton, Captain, 286; Mosley, T. B., 285; Ready, R., 282; Rundell, W. W., 279; Tobin, Sir Thomas, 290; Worsnop, C. B., 287
Excavations at Penwortham Hill, 62
Excursion to Manchester, 297
Excursion to Preston, 260
Eyes, use of two, 272

F

Faussett, Rev. B., his merits as an historian, 86
FAUSSETT MUSEUM, AS AFFORDING MATERIALS FOR HISTORY, 85
Fazakerley, Thomas, in account with Lord Molyneux, 286
Fibulæ exhibited, 277
FINANCIAL POSITION OF THE HISTORIC SOCIETY, 262
Fortifications in neighbourhood of Burnley, 32
Fossil trees found at Burnley, 99; their geological position, 99; common in coal fields, 100; conditions attending their growth, 103
Foundation stone of New Free Public Library, address presented at laying of, 295
Foundations of New Free Public Library, clay from, made into a vase, 287
Frackelton, Rev. S. S, enrolled a member, 288
Free Public Library, Liverpool, 243
French, Gilbert James, donor, 265, 284; special vote of thanks to, 265
Funeral urns found at Catlow, 41

G

Garstang, slow increase in population of, 201
Gath, Samuel, Chairman, 259
Geography in connexion with history, 107
Genealogical map of the Paleologi, 222
Gerard, Henry, enrolled a member, 276
Gibson, A. Craig, donor, 284; enrolled a member, 271; exhibitor, 285, 289; paper by, 181, 285, 289
Glass, Roman, 287
Grazebrook, George, donor, 282, 283; exhibitor, 282, 289, 291; paper by, 280
Grazebrook, Henry, donor, 289
Gregson, Charles Stewart, exhibitor, 285; paper by 165, 285
Grimmer, W. H., enrolled a member, 285
Guyton, Joseph, donor, 286; exhibitor, 286

H

Hains, Rev. P. F. J. B., enrolled a member, 274
Hall, Charlton R., enrolled a member, 291
Hartnup, John, exhibitor, 272; paper by, 11, 279; registers of barometer and anemometer by, 223
Haywood, Francis, enrolled a member, 291
Head, Miss, exhibitor, 291
Heath, Edward, donor, 289
Heaton, Mrs. A. M., donor, 265, 277
Henderson, W., exhibitor, 286, 291
Heywood, James, M.P., donor, 282; re-admitted as a member, 271
High water, mean of, at Liverpool, 224
Hinde, J. H., donor, 277
HISTORICAL SKETCH OF THE LIVERPOOL LIBRARY, 235
HISTORY OF THE ENGLISH LANGUAGE, 143
History, how it should be written, 105; traced by local names, 114
HOGGART, THOMAS, REMARKS ON THE LIFE AND WRITINGS OF, 285
Hoggart, Thomas, Remnants of Rhyme by, 285
Holden, Thomas, enrolled a member, 274
Hornblower, Lewis, enrolled a member, 291
Horner, W., enrolled a member, 288
Howell, Edward, enrolled a member, 274
HOYLAKE ANTIQUITIES, THE, 289
Hume, Rev. Dr., concluding address by 292; donor, 285; exhibitor, 266, 271, 272, 275, 277, 278, 279, 289; papers by, 262, 289, 291; vote of thanks to, 264
Hume, Hamilton, enrolled a member, 291
Hutchinson, W., observations on the tides of Liverpool by, 240; narrow escapes of, 241

I

Imitation in Poetry how far admissable, 79
Importance of testing chronometers, 11
INCREASE OF POPULATION IN LANCASHIRE AND CHESHIRE, 198
Increase of town populations, 200; slowest at Garstang, 201; most rapid at Chorlton, 202
Inscriptions on tombs of Sir Nicholas and Lady Lower, 215; Theodoro Paleologus, 213
Ivory, ancient commercial sources of, 246
Ivory carvings, remarks on, 245

J

Jeffery, J. R., enrolled a member, 291
Johnson, Mr., donor, 281
Jones, W. Hope, enrolled a member, 275
Juncker, P., enrolled a member, 276
Jupiter and moons, occultation of, 279

K

Karl, son of Charlemagne, oath of, 8
Keith, Mr., donor, 291; exhibitor, 291
Kemble, John M., death noticed, 286; note from, 277; quotation from, 89
Kendrick, Dr., exhibitor, 286
Kershaw, James, enrolled a member, 275
Kendal, vortex wheel near, 280
Kingsmill, Henry, donor, 265
Kingston down, a Roman burying place, 87
Kirkman, Rev. T. P., paper by, 127, 291
Kitchen, Joseph, enrolled a member, 291

L

Lamb, David, donor, 281
Lancashire, language of, under the Romans, 1; population of, 195, 250
LANGUAGE OF LANCASHIRE UNDER THE ROMANS, 1
Landulph Church, 213; tomb of Theodoro Paleologus in, 215
Latham, R. G., paper by, 1, 278
LEPIDOPTERA OF THE LIVERPOOL DISTRICT, 165
Leyland, Mr., exhibitor, 276
LIBRARY, ADDITIONS TO.
1. *Books.*
Athenæum, the, 1856, 281
Archæological mine, 288
Camden's Britannia, by Gough, 4 vols., 282
Catalogue of the Liverpool Library, 289
Catalogue of Pottery and Porcelain specimens in the Museum of Economic Geology, 283
Catalogue of Works of Decorative Art, 286
Caulfield's Episcopal and Capitular Seals of Irish Cathedral Churches, 288

Grazebrook's Sir Geoffrey, and other poems, 289
——Poems, Sacred and Miscellaneous, 289
Herdman's Ancient Liverpool, 287, 289
Hoggart, Thos., Remnants of Rhyme, by, 284
Howell's Epistolæ Ho-Elianæ, 283
Londesborough's Miscellanea Graphica, 254, 283, 288
Measom's Official and Illustrated Guide to the London and North-Western Railway, 265
Notes and Queries, and Index, 286
Ormerod's Genealogical Essays, 271
—— Miscellanea Palatina, Index, &c., 277
Perthes, B. de, Voyage à Constantinople, 281
Playfair's Porisms, 291
Pycroft's Arena Cornubiæ, 283
Reliquiæ Antiquæ Eboracenses, 287
Rockliff's Literary Fables, from the Spanish of Yriarte, 289
Shakspeare's Plays, 5 vols, 281
Smith's, C. R., Collectanea Antiqua, 274
Smith's, Dr. R. A., Life of Dalton, 271
Syer's History of Everton, 265
Thompson, Dr. D. P., Liverpool described, 275
Wilkinson, T. T., History of the Parochial Church of Burnley, 289
Yorke's Royal Tribes of Wales, 288

2 *Learned Societies, Transactions & Proceedings of*
London.
Archæological Journal, 283, 288
British Archæological Association, Journal of, 279
Ethnological Society, Journal of, 284; Regulations of, 284; list of Members of, 284
Geological Society, Journal of, 278, 287, 290
London and Middlesex Archæological Society, Transactions of, 288
Numismatic Chronicle and Journal, 283
Philological Society, Journal of, 278
Royal Asiatic Society, vols. x. xiv., 275
Royal Astronomical Society, Memoirs of, vols. xi. to xxiv., 271; Notices of, vols. viii. to xv., 275
Royal Geographical Society, Journal of, 278, 287, 290; Proceedings of, 278, 284, 287, 290
Royal Society, Proceedings, 285, 290
Society of Arts, Papers relating to, 285
Statistical Society, Journal of, 1856, 271, 284; Report by, on Medical Charities of London, 284
Provincial.
Archæologia Cambrensis, 285
Cambridge Antiquarian Society, Report, 1856, and communications to, 275
Cambridge Philosophical Society, Transactions of, 291
Leeds Literary and Philosophical Society, Transactions of, vol. I, part i., 278; Annual Reports of, 1852-56, 276; account of Egyptian mummy presented to, 278
Manchester Philosophical Society, vols. vi. xiii., 271
Northampton, York, and Lincoln, Reports and Papers of United Societies of, 285
Somerset Archæological and Natural History Society, Proceedings of, 287
Sussex Archæological Collections, vol. i. 277
Yorkshire, Report of Proceedings of Geological and Polytechnic Society of West Riding of, 285
Liverpool.
Architectural and Archæological Society, Proceedings of, 291
Chemists' Association, Transactions of, 271
Laws and Regulations of Liverpool Lyceum, 289
Literary and Philosophical Society of, 281
Liverpool Library, Catalogue of, 289
Liverpool Royal Institution, Report of, 291
Polytechnic Society, Transactions of, 1856, 282
Report of Health Committee, 284
Scotland.
Royal Society of Edinburgh, Proceedings of, 276
Ireland.
Geological Society of Dublin, Journal of, 291
Kilkenny and S. E. of Ireland Archæological Society, Proceedings of, 277, 288
Philosophical Society, Transactions of Dublin University, 291
Foreign.
Antiquaires de l' Ouest, Memoires de la Société, 287
Antiquaires du Nord, 3 vols., 289
Antiquariat Tidscrift, 3 vols., 289
Antiquitates Americanæ, 289
Archéologique de l' Orleannais, 287

3 *Parliamentary Papers.*
Liverpool Water Works, Acts relating to, 286
Runcorn and Northwich Turnpike Road, 286
Salt Duties, Laws relating to, 286

4 *Complete Pamphlets.*
Booth's How to Learn, and What to Learn, 275
Financial Reform Tracts, 289
History of Representation of Preston, 283
Inquiry into position of old lighthouse at Wallasey-Leasowes, 278
Lothian, its position, &c., 277
Origin and authorship of Waverley Novels, 284
Pamphlets relating to Liverpool, volume of, 288
Preston in the olden time, 289, 291
Rhind's British Antiquities, their present treatment, &c., 265
Roscoe, Annotated Essay on, 278
Roman Garrison at Mancunium, Memoir on, 286
The Manchester Exhibition Review, 271
Table Talk in the Olden Time, 289
The Scottish Field, 275
Thompson's, Dr., Philosophy and Poetry of Weather Knowledge, 275

5 *Reports and General Annuals.*
Ladies' and Gentlemen's Diary, 1857, 291
Liverpool Health Committee, Report of, 284
——Police Establishment, Report of, 291
Manchester and Liverpool Agricultural Society, Journal of, 283
Mersey Inquiry Committee, Report of, 278
Mersey and Irwell Navigation, Report on, 286
Weights and Measures, Report on Agricultural, 283

6 *Maps, Plans, Broadsides, &c.*
Adams' Weekly Courant, 265
A Norwich Play Bill, 265
A Tyburn Ticket, 265
Bill of Lading, 286
Hyde and its Neighbourhood, 286
Letter on Roman Sepulchral Remains in Ireland, 286
Map of Chester, 277
Observations on an Ancient Talisman, 265
Photograph of Bronze Figure, 289
Photographs commemorative of laying foundation of Liverpool Free Public Library, 291
Rubbing from tomb of Theodoro Paleologus, 291
—— Nicholas Lower, 291
—— Dr. W. Balcanquhall, 288
Suggestions for a Medal, &c., 265
The Lancashire Omnibus, 265
Wallasey, Church, sketch of, 282; photograph of, 284

Librarian of Liverpool Library, 238, 239
Lindsay, John, donor, 265
Lingard, A. R., exhibitor, 279
Liverpool Advertiser, Williamson's, 235
Liverpool Compass Committee, notice of, 278
Liverpool Library, Historical Sketch of, 235; first prospectus of, 244; social committee meetings of, 242
Liverpool in 1757, 235; pottery of, 277, 294; Lepidopters of, 165
Museum, additions to.
A Chinese ring, 265
Bowl of Tobacco pipe of 16th century, 268
Chinese gong, 365
Coins, political tokens, &c., 265
Fragments of ancient burial urn, 275
Guidon of silk, four yards long, 265
Head of Albatross, 265
Horse bell, curious, 281
Impression on gutta percha of royal seal of Edward IV, 272
Incrustations from Steam Boilers, 276
Medal used by members of Liverpool Library, 289
Medal commemorating meeting at Manchester of Archæological Association, 282
Political token commemorating meeting of Allied Powers in Paris, 1814, 267
Seals, impressions of, 283
Snout of Swordfish, 265
Stones from Casterolffe, 277
Locality of the battle of Brunanburh, 30
Londesborough, Lord, donor, 274, 283, 288
Locke, John, paper by, 119, 283
Longevity in the lake district, 190
Lower, Sir Nicholas and lady, arms and inscription on tomb of, 215
Ludwig, oath of, 8
Lupton, B., donor, 288

M

Macbeth and Richard III. compared, 227
Macintyre, Dr. P., donor, 289; exhibitor, 275; paper by, 235, 290
McNicoll, Dr., enrolled a member, 291
M'Quie, Peter R., donor, 265; exhibitor, 271, 277
Magna Charta, illustrated, 282
Manchester, excursion to, 297
Marshall, Thomas, exhibitor, 275
Marshall, W., enrolled a member, 276
Material progress of the United States, 271
Materials for history, 85
Mather, John, his death noticed, 288
Mather, Captain R., enrolled a member, 282
Mathematical puzzles, 127, 135
Mayer, Joseph, donor, 265, 283, 586; exhibitor, 277, 282, 286, 287, 288, 290, 291; chairman, 271, 285, 287; Conversazioné by, 295; vote of thanks to, 296
Medal of Liverpool Library, 239
Meetings of Historic Society, annual, 259; miscellaneous, 265, 287; ordinary, 270, 271, 274, 275, 276, 278, 279, 281, 282, 283, 284, 285, 288, 289, 290; extra, 295; special general, 296, 298
Members Enrolled.—Ansdell, John, 274; Bean Edward, 290; Broughton, Fred., 274; Brown, Robert, 275; Burlington, Earl of, 287; Campbell, Captain, 276; Carr, Thomas, 283; Cartwright, Samuel, 276; Cavendish, Lord, 287; Cheetham, John, 290; Clint, F. A., 290; Corser, Rev. T., 276; Cranage, Dr. E., 275; Cresswell, Sir. C., 290; Crory, W. G., 274; Croxton, Thomas, 271; Driffield, Walter W., 274; Eaton, F. J., 276; Evans, Robert, 274; Frackelton, Rev, S. S. 289; Gerard, Henry, 276; Gibson, A. Craig, 271; Grimmer, W. H., 285; Hains, Rev. P. F. J. B., 274; Hall, Charlton R., 291; Haywood, Francis, 291; Holden, Thomas, 276; Horner, W., 288; Hornblower, Lewis, 291; Howell, Edward, 274; Hume, H., 291; Jeffery, J. R., 291; Jones, W. Hope, 275; Juncker, Philip, 276; Kershaw, James, 275; Kitchen, Joseph, 291; O'Donnell, Dr. John, 274; Marshall, W., 276; Mather, Captain R., 282; M'Nicoll, Dr. D. H., 291; Mozley, Charles, 291; Mosley, T. B., 276; Myres, J. J., 275; Naylor, R. C., 278; Newenham, Rev. T., 285; Parker, R. T., 267; Pedder, H. N., 275; Preston, G. T. R., 284; Quekett, Rev. W., 276; Robinson, Joseph, 275; Shuttleworth, Sir J. P. Kay, 274; Sodor and Man, Lord Bishop of, 265; Stearns, James, 277; Stewart, A. C., 291; Stroud, W. Lawrence, 271; Threlfall, Richard, 275; Towson, J. T., 285; Walmsley, Thomas, 275; Ward, John A., 291; Watt, Richard, 279; Woods, Rees, 277
Meredith, Sir W., 277
Middleton, Captain, exhibitor, 286
Molyneux, Lord, in account with Thomas Fazakerly, 286
Moore, T. J., paper by; 43, 276
Morals of the people of the lake district, 190
Mosley, T. B., exhibitor, 285; enrolled a member, 276
Mozley, Charles, enrolled a member, 291
Myres, T. J., enrolled a member, 275

N

Names of places, early origin of, 110; changes in, 110; suggestions to the historian, 115
Navigation of Persian Gulf, 122
Naylor, R. C., enrolled a member, 278
Neap tides, height of, at Liverpool, 294
Newenham, Rev. T., enrolled a member, 285
Newlands, James, donor, 284
Newton, John, paper by, 272
Notes on the Yak, or Grunting Ox, and other Ruminating Animals from Central Asia, 43

O

Oath of emperors Karl and Ludwig, 8
Observatory, Liverpool, chronometers tested at 11
Occultation of Jupiter and moons, notice of, 279
O'Donnell, Dr. John, enrolled a member, 274
On a Vortex Wheel near Kendal, with remarks on Water Wheels, 260
On the Relation between the Material Progress of the United States and the Capital and Labour of Europeans, 271
Officers, list of, vi; vote of thanks to, 264
——— of local societies invited to attend meetings of Historic Society, 266
Ordnance survey, notice of, 278
Ormerod, George, donor, 271, 277
Oil, effects of heat on, in chronometers, 16
Old dock sill, the tidal standard at Liverpool, 293
Origin of the people of the English lake district, 181
Otley, Jonathan, notice of, 193

P

Paleologus, Theodoro, visit to the tomb of, 213; his arms, 216; family and descendants, 216, 219, 221
Parker, R. T., enrolled a member, 276
Parks, Lieut. M. T., paper by, 233
Perris, Mr., librarian, 239

Peterborough, Bishop of, particulars respecting, 276; swivel seal belonging to, 275, 276
Peers, W., donor, 268
Perthes, B. de, donor, 261
Pedder, H. N., enrolled a member, 275
PENWORTHAM, CASTLE HILL OF, 61; where situated, 6; excavations at described, 63; remains found at, 64, 67; an Anglo-Saxon residence, 71
PEOPLE OF THE ENGLISH LAKE COUNTRY, THEIR ORIGIN, HISTORY, AND CHARACTER, 181; their physical condition, 189; their morals, 190; attachment to home, 191; peculiarities, 191; superstitions, 192
Perfect r-partitions of $r^n - r + 1$
Philology as an aid to history, 105
Phoenix, Mr., Librarian of Liverpool Library, 239
Pictures in right and left eyes dissimilar, 272
Poetry, Resemblance, Imitation, and Plagiarism in English, 77
Poetry the early form of history, 106
Portland vase, error respecting, 294
Population of Lancashire and Cheshire, 195; tables of, 208 to 212
Position of the clergy in the lake district, 186
Pottery, domestic, introduced into Britain by the Romans, 93
Prayer by Athelstan, 28
Primitive character of British population obliterated by the Roman occupation, 143
Presidents of the Liverpool Library, 240
Preston, G. T. R., enrolled a member, 284
Proceedings, Session ix, 259
"Pryck spur" found at Penwortham Castle, 73; cognizance of the Norman knight, 74; observations on, 284
Pulszky, Francis, paper by, 245
Pycroft, J. W., donor, 263

Q

Quekett, Rev. W., enrolled a member, 276

R

Ramsay, Rev. A., paper by, 105
Rates of chronometers tested, 12; the same in two temperatures but not in three, 16
Ready, R., exhibiter, 262
Reay, James, donor, 291
REMARKS ON ANCIENT IVORY CARVINGS, 245
RESULTS OF AN EXAMINATION OF THE RECORDS OF THE LIVERPOOL SELF-REGISTERING TIDE GUAGE, 223
Report, annual general, 259
Rhind, H. H., donor, 265
Richard III. and Macbeth compared, 227
Richardson's Geology quoted, 103
Ring money, 290
Ring, gold, found at Hoylake, 291
Robinson, Joseph, enrolled a member, 275
Robson, Dr. J., donor, 275; paper by, 85, 266
Rockliff, Robert, donor, 269
Roman and Saxon graves contiguous, 88
Roman chronology, 229
Romans, language of Lancashire under the, 1
Routes from Mediterranean to Persian gulf, 120
Rundell, W. W., donor, 276; exhibitor, 79
Russia, imperial family of, 219
Ryder, T. B., donor, 283

S

St. Guthlac of Croyland, story of, 4
Sainthill, R., donor, 265
Saxons an oppressed race, 113
Saxon ornaments exhibited, 277
Scandinavian terminations and prefixes, 113
Seals, conventual and corporate, exhibited, 268
Session's judgment exhibited, 266
Shakspeare's Macbeth and Richard III. compared, 227
Sheep, Argali and Burrhel, 56
Shooting Burrhel and Thor, 59
Shuttleworth, Sir J. P. Kay, enrolled a member, 274
Sight and hearing compared, 274
Smith, Charles Roach, donor, 274; quoted, 88, 95
Smyth, Captain, notes by, 43; on the Yak, 51; on the Thor, 54; on the Argali Sheep, 56; on the Burrhel Sheep, 58; on Burrhel and Thor shooting, 59
Sibertswold down, the site of a Roman and British village, 87
Sodor and Man, Lord Bishop, enrolled a member, 265
Spring tides at Liverpool, height of, 294
Stereoscope, theory of the, 272; stereoscopes exhibited, 274
Stonehouse, James, paper by, 227
Stesins, James, enrolled a member, 277
Stewart, A. C., enrolled a member, 290
Stroud, W. Lawrence, enrolled a member, 271
Superstitions of the people of the English Lake district, 192
Syro-Arabian Railway, 123

T

Tables of population of Lancashire and Cheshire, 208 to 212.
Temperature elevated, for testing chronometers, 18
Testing chronometers, importance of, 11
Thar, or Jumlah goat described, 53
Thompson, Dr. D, P., donor, 275
Thompson's vortex water wheel, 280, 281
Thornber, Rev. W., paper by, 61
Threlfall, Richard, enrolled a member, 275
Tide-guage at Liverpool, 223
Tides at Liverpool, observations on, 224, 240; highest, 225; lowest, 225
Tobin, Sir Thomas, F.S.A., exhibitor, 290
Tomb of Theodoro Paleologus, 213
Town, its meaning defined, 197
Town and country population, comparative morality of, 205
Town clerk, letter from, 266
Town council of Liverpool, thanks to, 266
Town population, a deteriorated one, 205
——— more than one-half the total population of England, 203
Towson, J. T., donor, 291; enrolled a member, 285; paper by, 213, 291
Treasurer's balance sheet, 261
Trees, fossil, discovered at Burnley, 99
Tudor, R. A., donor, 265
Turbines, 281
Turner's, Sharon, Anglo-Saxons, quoted, 22, 23, 26

V

Varty, T., donor, 264
VISIT TO THE TOMB OF THEODORO PALEOLOGUS 213
Vortex wheels, 280; improvements in, 281

W

Walmsley, Thomas, enrolled a member, 275
Ward, John A., enrolled a member, 290
Water wheels, 280, 281
Watt, Richard, donor, 268; enrolled a member, 279

Way, Albert, donor, 272
Wedgwood, T. G., donor, 283
Welton, T. A., paper by, 195, 290
Wesley, John, letter by, 265, 266
Whitaker, Rev. John, as an historian, 85; compared with Rev. Brian Faussett, 85
Whitehead, J. W., donor, 281
Wilkinson, T. T., donor, 275, 277, 280, 291; paper by, 21, 99, 275, 276
Wintoun, extract from, 8
Wind, Horizontal motion of, at Liverpool, 226
Women good judges of character, 229
Woods, Rees, enrolled a member, 277
Worsnop, C. B., exhibitor, 287
Wright, Thomas, M.A., paper by, 195, 288

Y

Yak, or grunting ox, notes on, 43; presented to Liverpool Museum, 44; dimensions, 44; habits, 45; wild race, 48; used for food, 48

Z

Zanzibar, fertility of, 120

FINIS.

T. BRAKELL, PRINTER, LIVERPOOL.

TRANSACTIONS

OF THE

HISTORIC SOCIETY

OF

LANCASHIRE AND CHESHIRE.

VOLUME X.

SESSION 1857-58.

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DIRECTIONS TO THE BINDER.

TO FACE PAGE

PLATE I.—Map of Lancashire and Cheshire 1
II.—Antiquities from Kertch 59
III.—Azimuth Card for the Latitude of Liverpool 111
IV.—El Sakhra 131
V.—Antiquities from Macon 165
VI.—Ditto Ditto 167
VII.—Further Memorials of Swale 169
VIII.—Icebergs in the Southern Ocean 239
IX.—Human Skull from Wallasey Pool 265
X.—Skull of *Bos Longifrons* from Ditto 267
XI.—Diptych of Clementinus 278
XII.—Fall of the Rebellious Angels 280
XIII.—Christ returning to his Parents 281
XIV.—The Triumph of Scipio ..... *ibid*
XV.—The Great Altarpiece of St. Bavon 285
XVI.—Virgo Sapientissima ..... *ibid*
XVII.—The Misers ..... *ibid*
XVIII.—King Charles the First on Horseback 286
XIX.—The Testament of Eudamidas 287
XX.—Portrait of Richard the Second ..... *ibid*
XXI.—Queen Elizabeth's Progress to Hunsdon House 288
XXII.—The Five Saints 297
XXIII.—Pressed Leather Chair of the Eighteenth Century 303
XXIV.—Enamelled Ewer and Basin, and Filagree Reliquary 304
XXV.—Carved Wooden Throne of a Venetian Doge 305
XXVI.—Enamelled Ciborium 306
XXVII.—Ivory Sword-handle, and Situla 307
XXVIII.—Embroidered Cope of the Fourteenth Century ..... *ibid*
XXIX.—Chinese Porcelain 308

EXPLANATORY NOTE.

Plates I, II, IV, V, VI and VII have been prepared by direction of the Council, at the expense of the Society, as have also plates IX and X, from photographs taken by Mr. Cauty.

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J. H. GENN, Esq.

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* In accordance with Law XX, the Council added the three elected Vice-Presidents to all the Sectional Committees.

CONTENTS.

[Papers marked thus * are illustrated. Those marked thus † have been abridged.]

PAGE.

* On the Population of Lancashire and Cheshire, and its local distribution during the Fifty Years 1801-51. By J. T. Danson, V.P., and T. A. Welton, Esqrs 1

Our Mother-tongue in our Father-land. By David Buxton, M.R.S.L... 37

Further remarks on the History of the two Counties, and its materials. By John Robson, M.D 47

* On the so-called Anglo-Saxon Antiquities discovered near Kertch, in the Crimea. By C. Roach Smith, Esq., in a letter to Joseph Mayer, Esq 59

Notes on the Classification of Human Knowledge, with especial reference to the methods which have been adopted, or proposed, for the Arrangement or Cataloguing of Libraries. By Edward Edwards, Esq. 61

† Ancient Customs and Superstitions in Cumberland. By A. Craig Gibson, Esq 97

* Azimuth Card for the Latitude of Liverpool. By W. W. Rundell, Esq. 111

On the Lepidopterous Insects of the Districts around Liverpool. By Mr. Charles Stuart Gregson 113

* El Sakhra. By Major-General The Hon. Sir Edward Cust, D.C.L., &c., President 131

On the Flora of Preston and its neighbourhood. By Mr. Charles Joseph Ashfield 143

* Description of some Antiquites from Macon, in the South of France. By Mr. H. Ecroyd Smith 165

*† Further Memorials of the late J. H. Swale. By T. T. Wilkinson, F.R.A.S., &c. 169

A Historical Sketch of Photography. By Charles Corey, Esq 183

† On the Geology of the Fylde District. By the Rev. W. Thornber, B.A. 187

On the Dipterous Insects of the district around Liverpool. By the Rev. H. H. Higgins, M.A 199

PAGE.

Notes on the Buslingthorpe Brass. By the Rev. John Sansom, B.A... 203

On Slavery as it existed in England during the Saxon Era, and the substitution of Villenage after the Norman Conquest, until its gradual extinction. By Joseph Wright, Esq. 207

On the Solar Eclipse of March 15th, 1858, as seen at Burnley. By T. T. Wilkinson, F.R.A.S., &c. 231

On the Solar Eclipse of March 15th, 1858, as seen near Oxford. By J. T. Towson, F.R.G.S., and T. Sansom, A.L.S. 233

* Icebergs in the Southern Ocean. By J. T. Towson, F.R.G.S. 239

On the Microscope as applied to Natural History. By Thomas Sansom, A.L.S., F.B.S.E. 255

* Notice of Mammalian Remains discovered in the excavations at Wallasey for the Birkenhead new docks. By Mr. Thomas J. Moore, Keeper of the Derby Museum, Liverpool. 265

* On the Manchester Art Treasures' Exhibition, 1857. By George Scharf, Jun., F.S.A., &c. 269

List of Members ix

Proceedings, Tenth Session, 1857-58 333

Report presented at Annual Meeting 333

Treasurer's Balance Sheet 334

† Further Discovery of Remains at the Roman Station, Walton-le-Dale. By Charles Hardwick, Esq 352

Appendix :—

Extra Meeting :—Conversazione at Mr. Mayer's Museum 355

Special General Meetings :—

Union with the Photographic Society, and alteration of law xvi. 355

Completion of Union with the Photographic Society 355

Excursion to Chester 357

LIST OF MEMBERS.

SESSION X, 1857-8.

The first List was dated 23rd November, 1848; all whose names appeared in it, are therefore Original Members. Those who have been enrolled as Mayors or Sheriffs have their year of office attached.

The letter P denotes that the Members in connexion with whose names it occurs, have read Papers before the Society.

Those whose names are printed in SMALL CAPITALS are Members of the Council; and in *italics* are Life Members.

Those marked thus * are Resident. The post town Liverpool is usually omitted.

A

23rd Nov., 1848. *Ainslie, Montague*, Grizedale, Hawkshead, Lancashire.
6th Dec., 1855. *Allcard, William*, 43, Upper Brooke street, Grosvenor square, London.
18th Sept., 1854. *Allport, William, 11, Dale street.
10th Feb., 1853. *Anderson, Robert Worrall, 23, Falkner square.
17th Dec., 1857. *Anderson, Thomas Darnley, 5, India buildings, Water street, and 37, Northumberland terrace, Everton.
3rd May, 1849. *Anderson, Thomas Francis, Holly lodge, Fairfield, and 3, Cable street.
4th Dec., 1856. Ansdell, John, St. Helens.
23rd Nov., 1848. Ansdell, Richard, 7, Victoria road, Kensington, London.
15th Sept., 1854. Arrowsmith, P. R., The Ferns, Bolton.
P. 11th May, 1854. Aspland, Rev. R. Brook, M.A., Dukinfield, Ashton-under-Lyne.
14th Dec., 1848. *Astley, John, Worrall buildings, 11, New Wapping, and Rock Ferry, Cheshire.
P. 9th Oct., 1854. Atherton, Henry, Sutton, Prescot.
15th April, 1858. *Atherton, John, 33, Manchester street.
8th Nov., 1849. Atkinson, Fenton Robinson, Oak house, Pendleton, Manchester.
H. Sh. Cheshire, 1857. *Atkinson, William*, Ashton hayes, Chester.
23rd Nov., 1848. *AVISON, THOMAS, F.S.A., Fulwood park, Aigburth, and 18, Cook street, TREASURER.
15th April, 1858. *Ayrton, Francis, Chatham street.

B

23rd Nov., 1848. *Badnall, Rev. William, M.A., Wavertree.
P. 23rd Nov., 1848. Baines, Thomas, Parliament street, Westminster.
15th April, 1858. *Banner, Rev. T. B., Orphan School, Myrtle street.

8th June, 1854. *Banning, John Johnson, 20, Castle street.
Mayor Man., 1851-53. Barnes, Robert, Brookside, Manchester.
15th April, 1858. Bath, Henry, Longlands, Swansea.
7th Jan., 1858. *Batten, Charles, 87, Lord street, and 74, Chatham street.
P. 6th Dec., 1849. Beamont, William, Warrington.
21st May, 1857. *Bean, Edwin, Revenue buildings.
30th Dec., 1854. *Bean, William, Revenue buildings, and 56, Berkeley street.
10th Sept., 1854. *Bedford, James, Ph.D.
15th April, 1858. *Bell, Christopher, Back Goree.
23rd Nov., 1848. *Bell, Henry, 16, North John street, and Grosvenor road, Claughton, Birkenhead.
6th April, 1854. Bell, John Gray, 11, Oxford street, Manchester.
15th Nov., 1854. *Belshaw, John, Wason buildings, 4, Harrington street.
P. 9th Dec., 1852. Benn, Edward, Ballymena, Ireland.
23rd Nov., 1848. *Bennett, William, Sir Thomas' buildings, and 109, Shaw street.
3rd Dec., 1857. *Berry, Percival, 7, Union court.
15th April, 1858. *Berry, J. R., James street.
15th April, 1858. *Bewley, A. R., Temple court.
7th March, 1850. Birch, Sir Thomas Bernard, Bart., The Hazles, Prescot.
23rd Nov., 1848. Birchall, Thomas, Ribbleton hall, Preston.
23rd Nov., 1848. *Bird, William, 9, South Castle street, and Wood Hey, Spittal.
4th March, 1852. Birley, Rev. John Shepherd, Halliwell hall, Preston.
P. 8th Jan., 1852. Birley, T. Langton, Carr hall, Kirkham.
6th Dec., 1855. Black, J., M.D., F.G.S., 2, George's square, Edinburgh.
20th Sept., 1854. *Blackmore, William, 1, Exchange street West, and Sutton, Cheshire.
23rd Nov., 1848. Blackburne, John Ireland, The Hall, Hale.
26th Sept., 1854. Bloxham, Frederick William, Alliance bank, Threadneedle street, London.
23rd Nov., 1848. *Blundell, Thomas Weld, Ince Blundell, Great Crosby.
P. 30th Dec., 1854. Bööck, Frederick Robert Paul, 86, Newman street, Oxford street, London.
5th May, 1853. Booth, Benjamin Witham, Swinton, Manchester.
1st May, 1856. Booth, John Billington, Preston.
15th Dec., 1853. Bossi, Arthur, Paris.
31st Sept., 1854. Bostock, Rev. H., M.A., Grammar school, Warrington.
3rd Jan., 1856. *Bouch, Thomas, 1, Oldhall street, and New Brighton.
23rd Nov., 1848. *Boult, Francis, Rumford place, and Devonshire road, Claughton.
P. 23rd Nov., 1848. *Boult, Joseph, North John street, and Parkfield road, Aigburth road.
8th Dec., 1851. Bourne, Cornelius, Stalmine hall, Preston.
15th April, 1858. *Bowers, Anthony, Vauxhall foundry.
6th Dec., 1855. Bowes, John, Blue Coat School, Warrington.
13th Nov., 1851. Brackstone, R. H., Lyncombe hill, Bath.
15th Dec., 1853. Bradbury, Charles, Salford crescent, Manchester.
17th Dec., 1857. *Bradley, Thomas, Bold street, and 18, Kenyon terrace, Birkenhead.
17th Dec., 1857. *Bradley, William Gibson, Bold street, and 18, Kenyon terrace, Birkenhead.

23rd Nov., 1848. *Brakell, Thomas, 7, Cook street, and 23, Richmond terrace, Everton.
30th Dec., 1854. Brent, Francis, Custom house, Southampton.
9th March, 1854. *Bright, Henry Arthur, B.A., Sandheys, West Derby, and 1, North John street.
3rd May, 1849. Brooke, Henry, Forest hill, Northwich.
6th March, 1851. *Brooke, Richard, jun.*, Norton priory, Runcorn.
13th Sept, 1854. *Brounlie, Charles, 19, Tower chambers.
4th Dec., 1856. Broughton, Frederick, Ulster railway, Belfast.
6th Jan., 1853. *Brown, Rev. Hugh Stowell, 118, Chatham street.
23rd Sept., 1854. *Brown, John*, F.R.G.S., F.R.S. North. Antiq. Copenhagen, 3, Newcastle place, Clerkenwell, London.
15th April, 1858. Brown, Thomas, near Whitehaven.
23rd Nov., 1848. **Brown, William*, M.P., 7, Chapel street, and Fenton's hotel, London.
15th March, 1855. *Browne, G. Mansfield, 15, South hill, Park road.
15th April, 1858 *Burgess, Adam, South John street.
11th Sept., 1854. *Burke, William, 160, Grove street.
17th Sept., 1854. Burnell, Rev. Samuel, M.A., Winwick, Warrington.
Mayor La., 1853-4. Burrell, John Stamp, Lancaster.
9th Dec., 1852. Bury, Edward, F.R.S., Croft lodge, Ambleside.
P. 15th Dec., 1853. *Buxton, David, M.R.S.L., Principal of the Liverpool Deaf and Dumb Institution, Oxford street.
2nd Nov., 1854. Buxton, Edward, Principal of the Cambrian Deaf and Dumb Institution, Swansea.

C

23rd Nov., 1848. *Caine, Nathaniel, 12, Dutton street.
3rd Dec., 1857. *Calder, Rev. William, M.A., Fairfield, Liverpool.
6th Dec., 1855. Calvert, F. Crace, F.C.S., M.R.A. Turin, Royal Institution, Manchester.
23rd Nov., 1848. *Campbell, Rev. Augustus, M.A., The Vicarage, Childwall, and 131, Duke street.
18th Dec., 1856. *Campbell, Captain William, R.L.A., North Battery.
4th April, 1850. *Carlisle, The Earl of*, Castle Howard, Northumberland.
5th March, 1857. *Carr, Thomas, Lower Bebington, Cheshire.
18th Dec., 1856. Cartwright, Samuel, Bushell place, Preston.
6th Dec., 1849. *Casson, William, 39, Parliament street, and 3, Great George square.
27th Sept., 1854. *Casey, George, Naylor street, and Walton.
26th Sept., 1854. *Cauty, Henry John, 31, Norton street.
3rd Dec., 1857. *Chadburn, Charles Henry, 71, Lord street, and Egremont, Birkenhead.
15th April, 1858. *Chaloner, Thomas, 26, North John street, and College street South.
14th Sept., 1854. *Chantrell, G. F., 150, Dale street.
H. Sh. Chesh., 1855-6. *Chapman, John*, Hill End, Mottram-in-Longdendale.
21st May, 1857. Cheetham, John, M.P., Eastwood, Stalybridge.
Cheshire, the High Sheriff of, Vice-President, *ex officio*. (George Fortescue Wilbraham, Esq., Delamere Lodge, Cheshire.)
2nd June, 1853. *Chester, The Lord Bishop of*, The Palace, Chester.
23rd Nov., 1848. *Clare, John Leigh, Richmond terrace, Breck road, and 11, Exchange buildings.

21st May, 1857. *Clint, Francis A., 14, Dale street, and 2, Beech terrace.
17th Dec., 1857. Coates, Rev. W. H., West Kirby, Cheshire.
10th Nov., 1854. Colston, Rev. John, Quarry bank, Wilmslow, Cheshire.
24th May, 1855. *Comber, Thomas, 33, Edge lane.
23rd Nov., 1848. *Conway, John, Cable street.
15th April, 1858. *Cooke, A., 8, Temple court.
15th April, 1858. *Cooke, Robert, Liscard.
P. 15th April, 1858. *Corey, Charles, 5, Slater street.
8th Sept., 1854. *Cornish, Thomas, Revenue buildings.
18th Dec., 1856. Corser, Rev. Thomas, M.A., Stand, Manchester.
23rd Nov., 1848. Coulthart, John Ross, F.S.A. Scot., Croft house, Ashton-under-Lyne.
11th Dec., 1856. Cranage, Edward, Ph.D., Old hall, Wellington, Salop.
21st May, 1857. *Cresswell, Right Hon. Sir Cresswell*, 21, Prince's gate, London, and Fleming house, Old Brompton, Middlesex.
4th Dec., 1856. Crory, William G., Belfast.
6th Dec., 1849. *Crosfield, Henry, 4, Temple place, and Edge mount, Edge lane.
6th Dec , 1855. *Cross, James L., 6, Sandon terrace, and Castle street.
1st Mar., 1855. Crosse, John Norman, F.S.S.
23rd Nov., 1848. Crosse, Thomas Bright, Shawe hill, Chorley.
2nd May, 1850. Crossley, James, F.S.A., President of the Chetham Society, Booth street, Piccadilly, Manchester.
26th Nov., 1856. Croxton, Thomas, Blue Coat School, Oldham.
P. 23rd Nov., 1848. *Cust, Major-Gen. the Hon. Sir Edward, K.C.H., D.C.L., F.R.S., Leasowe Castle, Cheshire, Claremont, Surrey, and Hill street, London, President.

D

8th Dec., 1851. Dale, Rev. Peter Steele, M.A., Mytholme lodge, Hollins green, Warrington.
8th Dec., 1851. *Dale, Robert N., Exchange court, Exchange street East.
P. 2th Dec., 1851. *Danson, John Towne, F.S.S., Eldon chambers, South John street, and the Grove, Woodchurch road, Birkenhead, Vice-President.
23rd Sept., 1854. *Davies, Comenius, 134, Paddington, Edge Hill.
15th April, 1858. *Davies, William, Lyceum place, Bold street, and Ladycroft cottage, Huyton.
6th Mar., 1856. Daw, Robert, F.B.S.E., &c., Custom house, Plymouth.
P. 23rd Nov., 1848. Dawes, Matthew, F.S.A., F.G.S., Westbrooke, Bolton.
10th Feb., 1853. Dawson, Pudsey, Hornby castle, Lancashire.
23rd Nov., 1848. **Dawson, Henry*, 30, Redcross street, and 14, St. James' road.
2nd May, 1850. *Dawson, Thomas, Rodney street.
23rd Nov., 1848. Dearden, James, F.S.A., Rochdale Manor, Lancashire, and Upton house, Poole.
6th April, 1850. De Tabley, The Lord, Tabley hall, Cheshire.
23rd April, 1857. *Devonshire, The Duke of*, D.C.L., F.R.S., Chatsworth, Derbyshire, and Devonshire house, London.
7th May, 1851. **Dickinson, Joseph*, M.A., M.D., F.R.S., F.L.S., M.R.I.A., Bedford street.
P. 20th Dec., 1855. Dobson, William, Chronicle office, Preston.

10th Dec., 1857. *Donbavand, Benjamin, 5, Chatsworth street, Edge Hill.
P. 7th March, 1853. *Dove, Percy M., F.S.S., F.I.A., Royal Insurance Office, 1, North John street, and 49, Hamilton square, Birkenhead.
4th Dec., 1856. *Driffield, Walter Wren, York buildings, Sweeting st.
23rd Nov., 1848. *Duarte, Ricardo Thomaz, 2, Royal Bank buildings.
13th Sept., 1854. *Duncan, Thomas, 18, West Derby street.
23rd Nov., 1848. *Dunlevie, Charles Thomas, Fenwick Chambers, 8, Fenwick street.

E

1st Jan., 1857. *Eaton, Francis James, Eaton villa, Richmond terrace, Breck road, and 7, Exchange chambers.
9th Dec., 1852. Eckersley, Thomas, Wigan.
15th April, 1858. *Eden, James, Park field.
25th Sept., 1854 *Edmondson, Henry, 200, Bootle lane.
P. 23rd Nov., 1848. *Egerton, Sir Philip de Malpas Grey*, Bart., M.P., F.R.S., F.G.S., Oulton park, Tarporley.
7th Jan., 1858. Egerton, Wilbraham, Rostherne hall, Knutsford.
6th April, 1850. *Ellesmere, The Earl of*, Worsley hall, Manchester, and Bridgewater house, London
3rd Mar., 1852. *Ellis, William, 28, Kensington.
23rd Nov., 1848. *Evans, Edward, 52A, Hanover street.
15th Sept., 1854. *Evans, H. Sugden, F.C.S., 52A, Hanover street.
4th Dec., 1856. **Evans, Robert*, Eldon grove, Rock Ferry.
8th Nov., 1849. *Evans, Thomas Bickerton, 52A, Hanover street.
23rd Nov., 1848. *Ewart, Joseph Christopher, M.P., 64, Pall Mall, London, and New Brighton.
6th May, 1852. *Ewart, William*, M.P., 6, Cambridge square, Hyde park, London.
7th Feb., 1850. Eyton, Peter Ellis, Town hall, Flint.

F

3rd Dec., 1857. Fairbairn, William, F.R.S., Manchester.
15th April, 1858. Fawcett, John, Ashton-under-Lyne.
23rd Nov., 1848. Feilden, John, Mollington hall, Chester.
11th Sept., 1854. Ferguson, William, F.L.S., F.G.S., F.R.G.S., 31, Torrington square, London.
23rd Nov., 1848. *Finlay, William, Collegiate Institution.
23rd Nov., 1848. *Fisher, William M., Ph.D., F.R.A.S., Upper Parliament street.
6th Dec., 1849. *Fleming, Thomas, 22, Sandon street, and 58, Castle street.
15th April, 1858. *Foard, J. T., Church street.
15th April, 1858. *Forrest, J. A., Lime street.
5th Dec., 1850. *Forster, Wilson, New ferry terrace, Rock ferry, and 36, Dale street.
23rd Sept., 1854. *Forwood, T. B., 33, North John street.
15th April, 1858. Fowler, C., Torquay, Devon.
7th May, 1857. **Frackelton, Rev. S. S.*, M.A., All Souls', Liverpool.
15th Dec., 1853. Franks, Augustus Wollaston, M.A., F.S.A., British Museum, London.

6th Jan., 1853. *French, Gilbert James*, Corr. Mem. S.A. Scot., Bolton.
7th Jan., 1858. *Frost, Meadows, Exchange alley West, and Chester.

G

14th Dec., 1848. *Gardner, Richard Cardwell, Colonial buildings, 34, Dale street, and Newsham house.
15th Dec , 1853. *Gardner, Rev. Thomas, M.A., Stanley.
31st Oct., 1854. Garner, James Pepper, Queen street, Cheapside, London.
3rd May, 1849. Garnett, Wm. Jas., M.P., Bleasdale tower, Garstang.
23rd Nov., 1848. *Gaskell, John Rooth, Exchange court, Exchange street East.
7th Feb., 1850. *Gath, Samuel, 45, Shaw street, Everton.
18th Dec., 1856. *Gerard, Henry, 10, Rumford place.
P. 20th Nov., 1856. *Gibson, A. Craig, Lower Bebington, Birkenhead.
7th Mar., 1850. *Gill, Robert, 1, Chapel street, and Much Woolton.
3rd Dec., 1857. Gleadowe, Rev. R. W., M.A., Neston Vicarage, Cheshire.
15th April, 1858. *Glover, John, 26, Hanover street.
9th Dec., 1852. Graves, Samuel Robert, 13, Redcross street.
7th Feb., 1850. *Gray, John, 16, St. Clement's terrace, Windsor, and 25, Strand street.
21st Sept., 1854. Gray, Rev. R. H., M.A , Kirkby, Prescot.
14th Dec., 1848. Gray, Thomas, Manager and Secretary, Unity Insurance Office, London.
6th Feb., 1851. Gray, William, M.P., Wheatfield, Bolton.
P. 20th Dec., 1855. *Grazebrook, George, F.S.A., 40, Canning street.
7th Feb., 1850. *Green, Robert Molyneux, 14, Rupert lane, Everton.
16th Sept., 1854. *Green, Thomas, 34, Chapel street.
23rd Nov., 1848. Greenall, Rev. Richard, M.A., Incumbent of Stretton, R.D., Stretton, Warrington.
23rd Sept., 1854. Greene, John Stock Turner, Myddleton Hall, Warrington.
31st Aug., 1854. Grenside, Rev. William Bent, M.A., Melling Vicarage, Lancaster.
19th Mar., 1857. *Grimmer, W. Henry, 6, Castle street.
3rd Dec., 1857. Grosvenor, Rev. Francis, M.A., St. John's, Chester.
15th April, 1858. Gulliver, T. O., Swansea.
8th Nov., 1849. *Guyton, Joseph, 163, Falkner terrace, Upper Parliament street.

H

20th Sept., 1854. Hadwen, Joseph, Fairfield, near Manchester.
4th Dec., 1856. *Hains, Rev. Phillip F. J. Bird, St. Matthias's, Liverpool.
21st May, 1857. *Hall, Charlton, R., 40, Everton terrace.
Mayor La., 1852-53. Hall, John, Lancaster.
2nd May, 1850. *Hall, William, Seaforth.
8th Dec., 1851. *Hammond, William John, 168, Brownlow hill.
23rd Nov., 1848. Hampton, Rev. H., M.A., 3, Lowther Cottages, Holloway, London.
10th Dec., 1857. *Hancock, Thomas S., Birkenhead.
15th April, 1858. *Harding, J., Revenue buildings, and Ashfield house, Holt hill, Birkenhead.

30th Dec., 1854. *Hardman, J. W., B.A., South Hill place.
P. 6th Mar., 1856. Hardwick, Charles, Preston.
P. 8th Nov., 1849. Harland, John, F.S.A., Guardian Office, Manchester.
5th May, 1853. Harrison, William, Rock mount, St. John's, Isle of Man.
12th Jan., 1854. *Harrison, William*, F.G.S., &c., Galligreaves House, Blackburn.
9th Dec., 1852. *Harrison, Henry Walter, 27, Castle street.
9th Feb., 1854. *Harrowby, The Earl of*, D.C.L., F.R.S., Sandon hall, Staffordshire, and 39, Grovesnor square, London.
23rd April, 1857. *Hartington, The Marquess of*, M.P., Chatsworth, Derbyshire, and Devonshire house, London.
10th Feb., 1853. *Hartley, Jesse, Derby road, Bootle, and Dock Yard.
10th Feb., 1853. **Hartley, John Bernard*, Bedford street South, and Dock Yard.
P. 11th Oct., 1854. *Hartnup, J., F.R.A.S., Observatory.
23rd Nov., 1848. Hawkins, Edward, F.R.S., V.P.S.A., F.L.S., British Museum, London.
22nd Sept., 1854. *Hawthorne, Nathaniel, U.S. Consulate.
3rd May, 1849. *Hay, John, 2, Cable street, and Parkfield Cottage, Birkenhead, Cheshire.
27th Sept., 1854. *Healey, Samuel R., 48, Castle street, and Westbank, Woolton.
23rd Nov., 1848. *Heath, Edward, Orange court, Castle street, and St. Domingo grove, Everton, Vice-President.
24th Oct., 1854. Heginbottom, George, Albert terrace, Ashton-under-Lyne.
11th May, 1854. Henderson, Ebenezer, LL.D., Greenbank, St. Helens.
8th May, 1856. *Henderson, William, 41, Church street.
23rd Nov., 1848. *Herdman, William Gawin, West Villa, St. Domingo vale, Everton.
23rd Nov., 1848. *Heywood, James*, F.R.S., F.S.A., F.G.S., Headlands, Prestwich, Manchester.
23rd Nov., 1848. *Heywood, Sir Benjamin*, Bart., F.R.S., F.S.S., Claremont, Manchester.
P. 23rd Nov., 1848. *Heywood, Thomas*, F.S.A., Hope end, Ledbury, Herefordshire.
3rd April, 1856. Hibbert Joseph, Brookbank, Hyde, Cheshire.
P. 4th Jan., 1849. Hibbert, Thomas Dorning, Middle Temple, London.
15th April, 1858. Hickson, John, Stanton-by-Dale, near Landsacre, Derbyshire.
P. 23rd Nov., 1848. Higgin, Edward, Sweeting street, Liverpool.
6th Dec., 1849. *Higgin, Thomas, Tower Chambers.
P. 12th Sep., 1854. Higgins, Rev. H. H., M.A., Asylum, Rainhill.
P. 23rd Nov., 1848. Hill, Rev. John Wilbraham, M.A., Waverton, Cheshire.
21st Sep., 1854. *Hill, Samuel, 11, Lower Castle street.
26th April, 1855. Hinde, Rev. Edmund, M.A.
P. 8th Dec., 1851. Hinde, John Hodgson, 9, Savile Row, Newcastle-on-Tyne, and Acton house, Felton, Northumberland.
11th May, 1854. *Hindley, Edward, 34, Exchange street East.
18th Sep., 1854. *Hindley, Rev. Hugh Johnson, S.C.L., St. George's, Everton.
23rd Sep., 1854. *Hindmarsh, Fred.*, F.G.S., F.R.G.S., Bucklersbury, London.
16th Sep., 1854. *Hodson, Thomas L., 39, Islington.

18th Dec., 1856. *Holden, Thomas*, Summerfield, Bolton.
24th Sep., 1854. *Holt. William D., 23, Edge Hill.
26th Sep., 1854. *Hore, Edmund Joseph, 6, George's Dock Gates.
21st May, 1857. *Hornblower Lewis, Clarendon buildings, South John street.
20th Sep., 1855. *Horner, Francis, 33, Everton road.
7th May, 1857. *Horner, W., 34, South Castle street, and Eldon house, Oxton.
23rd Nov., 1848. *Horsfall, Thomas Berry, M.P., Mill Bank, West Derby.
14th April, 1853. **Houghton, Richard H., Jun.*, Sandheys, Waterloo.
4th Dec., 1856. *Howell, Edward, Church street
P. 8th Nov., 1849. *Howson, Rev. John Saul, M.A., Principal of the Collegiate Institution, Vice-President.
Mayor La., 1849-50. Howitt, Thomas, Lancaster.
27th Sep., 1854. *Hubback, Joseph, 27, Lower Castle street, & Aigburth.
10th Dec., 1857. *Hughes, John R., Laverock bank, Toxteth Park.
14th Sep., 1854. *Hughes, Joseph, 2, Upper Duke street, and 9, Brownlow hill.
16th Sep., 1854. *Hughes, J. B. 77, Mill street.
6th April, 1854. Hughes, Thomas, 4, Paradise row, Chester.
8th Feb., 1852. Hulton, William Adams, Hurst Grange, Preston.
Mayor C., 1851-2. Humbertson, Phillip Stapleton, Chester.
P. 23rd Nov., 1848. *Hume, Rev. Abraham, D.C.L., LL.D., F.S.A., Corr. Mem. S.A. Scot., 24, Clarence street, Everton, Hon. Secretary.
21st May, 1857. Hume, Hamilton, Cooma, Yass, New South Wales.
9th Feb., 1854. *Hunt Alfred W., B A., 31, Oxford street.
9th Dec., 1852. *Hutchison, Robert, 12, Sweeting street, and 6, Canning street.

I

9th Oct., 1854. Ingham, Rev. Thomas Barker, M.A., Rainhill.
15th April, 1858. *Isaac, J. R., Castle street.

J

1st April, 1852. *Jacob, John Gibborn, 56, Church street.
23rd Nov., 1848. Jacson, Charles R., Barton Lodge, Preston.
15th April, 1858. *Jago, J. R., Upper Huskisson street.
21st May, 1857. *Jeffery, James Redcliffe, 43, Church street, and 11, Lodge lane.
23rd Nov., 1854. *Jeffery, William R., 8, Montpelier terrace, Upper Parliament street.
18th Sep., 1854. *Johnson, Henry, Walton.
23rd Nov., 1848. *Johnson, John H., 7, Church street.
15th April, 1858. *Jones, Charles, Bridge street, Birkenhead.
11th Dec., 1856. Jones, W. Hope, Hooton, Cheshire.
23rd Nov., 1848. *Jones, Alfred, 17, Goree Piazzas.
15th April, 1858. *Jones, Daniel, 2, Tarleton street.
23rd Sep., 1854. Jones, Edward, The Larches, Handsworth.
3rd May, 1849. *Jones, Morris Charles, 75, Shaw street.
6th Dec., 1849. *Jones, Roger Lyon, 1, Great George square.
15th Sep., 1854. Jones, Thomas, B.A., Chetham Library, Manchester.
18th Dec., 1856. *Juncker, Philip, Monckton Lodge, Anfield, Walton.

K

15th April, 1858. *Keith, W , 34, Castle street.
23rd Nov., 1848. *Kendal, Thomas, Green lane, Wavertree.
P. 3rd May, 1849. Kendrick, James, M.D., Warrington.
11th Dec., 1856. Kershaw, James, M.P., Oaklands, Victoria park, Manchester.
21st May, 1857. *Kitchen, Joseph, Oak house, West Derby.

L

15th Dec., 1853. *Lace, William Henry, 1, Union court, Castle street, and Beaconsfield, Woolton.
15th April, 1858. *Lafone, H , 87, Northumberland terrace, Everton, and 113, Marybone.
14th Mar., 1852. *Lambert, David Howe, 10, Exchange chambers, Tithebarn street, and Rock Park, Rock Ferry.
LANCASHIRE, THE HIGH SHERIFF OF, VICE-PRESIDENT, *ex-officio*. (George Marton, Esq., Capernwray Hall, Lancaster.)
23rd Nov., 1848. Langton, William, Manchester.
21st Sep., 1854. *Lea, James, Surveyor, Egremont, Cheshire.
6th Dec., 1849. *Ledger, Reuben, Grove house, West Derby.
1st April, 1852. Lee, Rev. Thomas Faulkner, M.A., Royal Grammar School, Lancaster.
23rd Nov., 1848. Legh, G. Cornwall, M.P., High Leigh, Warrington.
10th Dec., 1857. Leigh, Major Egerton, The West Hall, High Leigh, Warrington.
15th April, 1858. *Leithead, H. F., Revenue buildings.
15th April, 1858. Lewthwaite, J., Hartlepool.
25th Sep., 1855. *Lidderdale, William, 42, Canning street.
4th April, 1850. Lilford, The Lord, Oundle, Northamptonshire, and Grosvenor place, London.
4th Mar., 1858. Lindsay, The Lord, Haigh Hall, Wigan.
23rd Nov., 1848. *Lingard, Alexander Rowsand, Eastham.
Mayor Liv., 1851-2 *Littledale, Thomas, Highfield house, and 13, Exchange buildings.
*LIVERPOOL, THE MAYOR OF, VICE-PRESIDENT, *ex-officio*, (James Holme, Esq.)
15th April, 1858. Lockey, Rev. F., LL.B., Swainswick, Bath.
14th Dec., 1848. *Lloyd, John Buck, 54, Castle street, and Aigburth.
6th Jan., 1853. *Longton, John, Breck road, and Peter's place, Rumford street.
P. 23rd Nov , 1848. *Lord, Lieut. William*, R N., 8, North parade, Bath.
23rd Nov., 1848. *Lowndes, Matthew Dobson, 7, Brunswick street, and Edge lane.
14th April, 1853. Lyon, Thomas Henry, Appleton hall, Warrington.
6th Dec., 1849. Lyon, Thomas, Appleton hall, Warrington.

M

21st Sept., 1854. *MacIlveen, Alexander, Principal of the Liverpool Institute, Sandon terrace.
15th April, 1858. *McInnes, J., 21, Neptune street.
P. 3rd Mar., 1853. *MACINTYRE, PETER, M.D., 128, Duke street.

27th Sep., 1854. *Macfie, Robert Andrew, 30, Moorfields, and Ashfield hall, Neston.
17th Dec., 1857. Mackie, Ivie, Manchester.
16th Sep., 1854. Mackreth, Rev. Thomas, B.D., Halton Rectory, Lancaster.
21st May, 1857. M'Nicoll, David Hudson, M.D., Southport.
15th April, 1858. *M'Nicoll, J., Brunswick Saw Mills.
23rd Nov., 1858. *M'Quie, Peter Robinson, Low hill, and 14, Water street.
5th May, 1853. **Macrae, John Wrigley*, Edge lane, and 22, Hackin's hey.
23rd Nov., 1848. *Macrorie, David, M.D., 126, Duke street.
6th Dec., 1849. *M'Viccar, Duncan, Abercromby terrace, and 7, Exchange buildings
3rd Jan. 1849. *Manchester, the Lord Bishop of*, Sedgley hall, Manchester.
23rd Nov., 1848. Markland, James Heywood, D.C.L., F.R.S., F.S.A., Bath.
23rd Nov., 1848 *Marsden, George, Vernon Priory, Edge Hill.
P. 5th June, 1841. Marsh, John Fitchett, Fairfield house, Warrington.
1st Jan., 1857. Marshall, W., Penwortham hall, Preston.
9th Mar., 1854. *Mason, William Ithell, 14, Lower Hope place.
23rd Nov. 1848. *Mather, Daniel, 70, Mount pleasant.
19th Feb., 1857. *Mather, Captain R., Finch house, West Derby.
15th April, 1858. *Mawdsley, H., Southport.
P. 23rd Nov. 1848. *Mayer, Joseph, F.S A., M.R Asiat. S., F.E.S., F.R.S. North. Antiq. Copenhagen, Associé étranger de la Société Impériale des Antiquaires de France, Hon. Mem. SS. Antiq., Normandy, l'Ouest, and the Morini, de la Société d'Emulation d'Abbeville, &c., 68, Lord street, Hon. Curator.
17th Feb., 1850. Mayer, Samuel, Newcastle-under-Lyne.
24th May, 1855. Melling, Thomas, C.E., Rainhill.
15th April, 1858. *Mercer, Nathan, 7, Church street.
15th April, 1858. *Mercier, J. D., Church street.
P. 6th Dec., 1849. Middleton, Captain James, F.S.A., Churchhurst Castle, Isle of Wight
P. 31st Dec., 1854. *Milner, William, 322, Upper Parliament street, and Phœnix Safe Works, Winsdor.
Mayor Liv., 1848-9 *Moore, John Bramley, M.P., Hon. Mem. Archæological Association, Carioca Lodge, Aigburth, and Orange court, Castle street.
3rd Dec., 1857. *Moore, Rev. Richard R., B.A., 28, Rupert Lane, Everton.
P. 8th Nov., 1849. *Moore, Rev. Thomas, M.A., 65, Oxford street, Librarian.
18th Dec., 1856. Moseley, Thomas Beeby, 52, Upper Charlotte street, Fitzroy square, London.
15th April, 1858. *Moss, J. B., Minshull street.
P. 23rd Nov., 1848. *Moss, Rev. John James, M.A., Upton, Cheshire.
7th Mar., 1850. *Mott, Albert J., 21, South Castle street, & Orchard hey, Preston road, Walton.
18th Sep., 1854. *Mott, Charles Grey, 27, Church road, Higher Tranmere.
3rd Dec., 1857. *Moult, William, 21, Leigh street, and Knowsley.

21st May, 1857. *Mozley, Charles, 125, Mount pleasant.
19th Sep., 1854. *Musker, Roger Melling, Walton.
11th Dec., 1856. Myres, John James, Bank Parade, Preston.

N

H.S. Ches., 1857. *Naylor, Richard*, Hooton, Cheshire.
23rd Nov., 1848. *Neill, Hugh, F.R.A.S., Abercromby square.
15th April, 1858. *Newlands, J., Public Offices, Cornwallis street.
P. 6th Dec., 1855. *Newton, John, 15, West Derby street.
23rd Nov., 1848. Nicholson, James, F.S.A., Thelwall hall, Warrington.
6th Dec., 1849. North, Alfred, Salcombe hill house, Sidmouth.
29th Sept., 1854. *Nottingham, John, M.D., 18, Roscommon street.
13th Dec., 1854. Nuttall, Thomas, F.L.S., Nut grove, Rainhill.

O

2nd Jan., 1851. *Oates, Captain W. C.*, Cavendish place, Bath.
4th Dec., 1856. *O'Donnell, John, M.D., 34, Rodney street.
P. 6th Dec., 1849. Ormerod, George, D.C.L., F.R.S., F.S.A., F.G.S., Sedbury Park, Chepstow.
6th Feb., 1851. Osborne, John James, Macclesfield.
3rd Jan., 1850. *Overend, James, 55, Hope street.
3rd Dec., 1857. *Oxley, Frederick, Acre terrace, 21, Everton brow.

P

23rd Nov., 1848. *Paris, Thomas Jeremiah, 68, Lord street.
3rd Jan., 1850. *Parker, Charles Stewart, Bank chambers, Cook street.
18th Dec., 1856. Parker, Robert Townley, Cuerden Hall, Preston.
1st May, 1856. Parr, Rev. H., Vicarage, Taunton.
7th Mar., 1850. *Patten, John Wilson*, M.P., Bank Hall, Warrington.
2nd Nov., 1854. Patterson, Andrew, Principal of the Deaf and Dumb Institution, Manchester.
9th Oct., 1854. *Peacock, John, 2, Chapel street.
6th Dec., 1849. *Pearce, George Massie, Hackins hey and Ormskirk.
23rd Nov., 1848. Pedder, Edward, Ashton Park, Preston.
11th Dec., 1856. *Pedder, Henry Newsham*, Preston.
23rd Nov., 1848. Pedder, Richard, Winckley square, Preston.
8th Dec., 1851. Perrin, Joseph, The Crescent, Levenshulme, Manchester.
P. 6th Jan., 1849. *Picton, James Allanson, F.S.A., 19, Clayton square, and Sandy Knowe, Wavertree.
3rd May, 1849. Pierpoint, Benjamin, Warrington.
23rd Nov., 1848. Pilkington, James, M.P., Park place, Blackburn.
10th Feb., 1853. *Platt, Robert*, Dean Water, Handforth, Manchester.
23rd Nov., 1848. *Poggi, Rev. Dominica Joseph, D.D., New Brighton College, Cheshire.
6th Dec., 1849. *Poole, John, 23, Oxford street.
29th Dec., 1854. Porter, Rev. Jas., M.A., St. Peter's College, Cambridge.
Mayor M., 1849-52. Potter, Sir John, Kt., M.P., Manchester.
1st Sept., 1854. Preston, Rev. G., M.A., Grammar School, Whalley.
12th Mar., 1857. *Preston, Geo. Theo. Robert, Rock House, West Derby road, and 13, Vernon street, Dale street.
6th Dec., 1849. *Preston, William, 13, Vernon street, and Rock House, West Derby road.

Q

18th Dec., 1856. Quekett, Rev. W., M.A., Rectory, Warrington.

R

9th Mar., 1854. *Radcliffe, John, Eaton Cottage, Knotty Ash, and 4, Water street.
23rd Nov., 1848. Raines, Rev. Canon, M.A., F.S.A., Milnrow Parsonage, Rochdale.
15th April, 1858. Ralstone, J., Glasgow.
P. 18th Sept., 1854. *Ramsay, Rev. Arthur, M.A., Highfields, Eaton road, West Derby.
15th April, 1858. *Rathbone, R., Aigburth road.
23rd Sept., 1854. *Rathbone, William, 24, Water street, and Greenbank, Wavertree.
21st Sept., 1854. *Rawlins, Charles Ed., jun., 23, Temple street, and 4, Windermere terrace, Prince's park.
15th Mar., 1849. Rawlinson, Robert, C.E., F.G.S., 34, Parliament street, Westminster.
13th Sept., 1854. *Raynes, James Trevelyan, 37, Old Hall street, and Rock park, Rock Ferry.
23rd Nov., 1848. *Reay, James, Guardian Office, Commerce Court, Lord street.
23rd Nov., 1848. *Reay, Thomas, 87, Church street.
29th Dec., 1854. *Rees, William, Oxford terrace, Vine street, Oxford street east.
7th Mar., 1850. *Richardson, Samuel, 102, Pembroke place.
15th Nov., 1855. Roberts, Thomas Kyffin, St. Asaph.
P. 23rd Nov., 1848. Roberts, William John, Cross Mount, Aughton.
14th Dec., 1848. *Robin, John, Chapel Walks, South Castle street, and Grove hill, West Kirby, Cheshire.
20th Dec., 1855. Robin, Rev. P. R., M.A., Barnston, Birkenhead.
23rd Nov., 1848. *Robinson, Charles Backhouse, 12, Myrtle street, and Matilda grove, Aigburth.
8th Mar., 1853. Robinson, John, Westfield, Huddersfield.
11th Dec., 1856. *Robinson, Joseph, 1, Rose hill, and Tue Brook, West Derby.
P. 3rd May, 1849. Robson, John, M.D., Warrington.
3rd Jan., 1850. *Ronald, Robert Wilson, Dale street.
15th April, 1858. Rooke, Rev. W. O., Bentham Rectory, near Lancaster.
15th April, 1858. Rowlandson, W., Kendal.
14th April, 1853. *Ryder, Thos. Bromfield, 2, Elliot street, Clayton square.
25th Sept., 1854. Rylands, Peter, Warrington.
P. 13th Dec., 1854. Rylands, Thomas Glazebrook, Warrington.

S

15th April, 1858. *Sadler, J. M., Public Offices, Cornwallis street.
6th Dec., 1855. *Sandbach, W. R., Bank buildings, Cook street, and The Cottage, Aigburth.
P. 19th Sept., 1854. Sansom, Rev. John, B.A., Buslingthorpe Rectory, Market Rasen, Lincolnshire.
P. 7th Sept., 1851. *Sansom, Thomas, A.L.S., F.B.S.E., 33, Everton road.

23rd Nov., 1848. *Scholfield, Henry D., M.D., 14, Hamilton square, Birkenhead.
8th Jan., 1852. Sharp, John, The Hermitage, Lancaster.
2nd June, 1853. *Sharp, William*, 102, Piccadilly, London.
23rd Nov., 1848. Sharpe, Edmund, M.A., Coedfa, Llanwrst, N. Wales.
1st Dec., 1855. *Shawe, J. R., Arrowe hall, Cheshire.
7th Feb., 1850. *Sherlock, Cornelius, 22, King street.
3rd Dec., 1857. *Shimmin, Hugh, Melbourne buildings, 21, North John street.
11th Feb., 1858. *Shute, Arthur, 21, Water street.
3rd May, 1849. Shute, Robert, 2, Baring crescent, Exeter, Devon.
4th Dec., 1856. Shuttleworth, Sir, J. P. Kay, Bart., Gawthrop Hall, Burnley.
23rd Nov., 1848 *Simpson, Rev. Samuel*, M.A., St. Thomas' Parsonage, Douglas, Isle of Man.
23rd Nov., 1848. Skaife, Thos., Vanburgh house, Blackheath, London.
10th Dec., 1857. Slade, Rev. James, M.A., West Kirby, Cheshire.
2nd May, 1850. **Smith, James*, Brunswick dock, and Seaforth.
30th Dec., 1854. *Smith, John Peter George, Spring Bank, Breck road.
16th Sept., 1854. Smith, John, Langley, near Macclesfield.
6th Jan., 1853. *Smith, William Penn, 26, Hanover street.
23rd Nov., 1848. *Snowball, J. G., 10, Castle street, and 11, Upper Canning street.
6th Nov., 1856. Sodor and Man, the Lord Bishop of, Bishop's court, Isle of Man.
2nd Nov., 1854. Stainer, William, 35, Chorlton road, Hulme, Manchester.
3rd Jan., 1856. *Staniforth, Rev. Thomas*, Storrs, Windermere.
13th Dec., 1855. *Steiner, F.*, Hyndburn, Accrington.
1st Jan., 1856. *Steains, James, 56, Upper Kensington, and 35, North John street.
15th April 1858. *Stevens, J., 166, Park road.
21st May., 1857. *Stewart, A. C., Union buildings, 16, North John street.
30th Dec, 1854. *Stewart, James Gordon, 3, West Derby street.
23rd Nov., 1848. *Stewart, Rev. John, M.A., Sandown Park, West Derby.
5th June, 1850. *Stock, John, 7, Exchange buildings, and Westdale, Wavertree.
20th Nov., 1856. *Stroud, William Lawrence, 1, Upper Woodlands, Clifton Park, Birkenhead.
8th Nov., 1849. *Stuart, William, 1, Rumford place, and Springfield House, Knotty Ash.
5th June, 1851. Stubs, Joseph, Park place, Frodsham.
25th Sept., 1854. *Sumners, Henry, Colquitt street.
21st Sppt., 1854. *Surr, John, Everton Valley.
23rd Nov., 1848. *Sutton, Hugh Gaskell, Exchange court, Exchange street, East, and Woodend, Aigburth.
4th Mar., 1852. *Sykes, James, Colonial buildings, 34, Dale street, and Breck house, Poulton-le-fylde.

T

15th April, 1858. Taylor, J. F., Cockermouth.
P 23rd Nov., 1848. **Thom, Rev. David*, D.D., Ph.D., 28, Erskine street.
15th April, 1858. *Thomas, George, 31, Lord street.

18th Feb, 1858. *Thompson, Henry, 151, Upper Parliament street, and 11, North John street.
P. 8th Dec., 1851. Thornber, Rev. William, B.A., Blackpool.
13th Sept., 1854. *Thornely, Samuel, 22, Clarence street.
8th Dec., 1851. *Tinne, John A., F.R.G.S., 13, Bank chambers, Cook street, and Briarley, Aigburth.
11th Dec., 1856. Threlfall, Richard, Avenham terrace, Preston.
Mayor Li. 1854-55. *Tobin, James Aspinall, South John street.
14th Dec., 1848. Tobin, Sir Thomas, F.S A., Ballincollig, Cork.
8th Jan., 1852. *Torr, John, 15, Exchange buildings, and Eastham.
H.S. Lanc., 1857. Towneley, Charles, Towneley hall, Burnley.
P. 2nd April, 1857. *Towson, John Thomas, F.R.G.S., 47, Upper Parliament street, and Sailors' Home.
5th Dec., 1850. *Tucker, Robert, 11, North view, Edge Hill.
P. 23rd Nov., 1848. *Tudor, Richard A., M.R.C.S., Church view, Bootle.
14th April, 1853. *Turner, Charles, 4, Lancelot's hey, and Dingle Head.
27th Sept., 1854. *Turner, John Hayward, 52, Rodney street.
6th Dec., 1849. Turner, Edward, High street, Newcastle, Staffordshire.
20th Dec., 1855. *Turner, William, Junr., Stourton, Cheshire.

U

8th Mar., 1854. *Underwood, Rev. Charles W., M.A., Vice-Principal, Collegiate Institution.

V

23rd Nov., 1848. **Varty, Thomas*, Walpole villa, Fairfield, and Lime street.
14th April, 1853. *Vose, James, M.D., 5, Gambier terrace, Hope street.

W

Myr. C. 1838-39, 48-49. *Walker, Sir Edward Samuel*, Berry hill, Mansfield, Notts.
11th Dec, 1856. Walmsley, Thomas, Preston.
6th Mar., 1851. Warburton, Rowland Eyles Egerton, Arley hall, Cheshire.
21st May, 1857. Ward, John Angus, Hooton lodge, Cheshire.
10th Dec., 1857. Wardell, William, Abbotsfield, Chester.
6th June, 1850. *Waterhouse, Sebastian, 13, Percy street.
26th Sept., 1854. *Watling, J. W. H., Wavertree.
5th Feb., 1857. *Watt, Richard*, Speke hall.
17th Dec., 1857. Watts, Sir James, Manchester.
2nd May, 1850. *Way, Albert*, M.A., F.S.A., Wonham manor, Reigate, Surrey.
1st Feb., 1849. *Webster, George, 6, York buildings, Dale street, and Mosley hill, Aigburth.
P. 3rd Jan., 1856. Welton, Thos. A., F.S.S., 147, Fenchurch street, London.
1st Feb., 1849. **Whitehead, James Wright*, Orange court, Castle street, and 15, Duke street, Edge Hill.
2nd June, 1853. *Whitley, George, 5, Clayton square, and Bromborough.
9th Oct., 1854. Whitley, Rev. John, M.A., Newton rectory, Warrington.
6th June, 1850. Whitley, Rev. William, B.A., Catsclough, Winsford, Cheshire.

P. 30th Nov., 1854. Wilkinson, Thomas Turner, F.R.A.S., Corr. Mem. Lit. and Phil. Soc. Manch., Burnley.
8th Jan., 1852. *Willoughby, Edward G., Marine cottage, Tranmere.
6th Dec., 1855. Wilson, G. F., F.R.S., Belmont, Vauxhall, London.
23rd Nov., 1848. Wood, Venerable Isaac, M.A., Archdeacon of Chester, Newton, near Middlewich.
23rd Nov., 1848. Wood, Isaac Moreton, M.A., Newton, near Middlewich.
9th Feb., 1854. Wood, Samuel, F.S.A., The Abbey, Shrewsbury.
10th Feb., 1853. *Wood, Thomas, B.A., Blue Coat Hospital.
7th May, 1851. **Woodhouse, John George*, 117, Henry street.
3rd Oct., 1854. Woolnough, Rev. Edward, Northenden Rectory, Stockport.
30th Dec., 1854. Worthy, George Smith, Bristol.
5th May, 1853. *Wylie, Alexander Henry, Union court, Castle street.

HONORARY MEMBERS.

6th Feb., 1851. Akerman, John Yonge, Sec. S.A.; Hon. M.R.S.L.; F.S.A. Newcastle; F.R.S. of Northern Antiquaries; Corr. Mem. S.S. Antiq. Scot. France, Russia, Switzerland, Rome; Hon. Mem. Roy. Acad., Stockholm; Somerset House, London.
27th Sept., 1854. Babington, Charles Cardale, M.A., F.R.S., F.L.S., Sec. C.P.S., St. John's College, Cambridge.
P. 13th Nov., 1851. Bell, William, Ph.D., 31, Burton street, Burton crescent, London.
6th Feb., 1851. Blaauw, William Henry, M.A., F.S.A., Beechland, Uckfield, Sussex.
6th Feb., 1851. Boileau, Sir John P., Bart., F.R.S., F.S A., Kettering-ham hall, Wyndham, Norfolk, and 20, Upper Brook street, Grosvenor square, London.
27th Sept., 1854. Brewster, Sir David, K.H., D.C.L., LL.D., F.R.SS.L. and E., Hon. M.R.I.A., St. Andrews, N.B., and Allerby, Roxburghshire.
6th Feb., 1851. Charlton, Edward, M.D., F.S.A. Newc., 7, Eldon square, Newcastle-on-Tyne.
P. 1st Feb., 1855. Clarke, Joseph, F.S.A., Saffron Walden, Essex.
8th Jan., 1852. De Perthes, J. Boucher de Crevecoeur, Chevalier des ordres de Malte et de la Legion d'honneur, membre de diverses Sociétés Savantes, Abbeville.
6th Feb., 1851. Duncan, Philip B., D.C.L., Oxford.
27th Sept., 1854. Gray, John Edward, Ph.D., F.R.S., F.L.S., V.P.Z.S., Pres. Entom. Soc., &c., British Museum, London.
P. 27th Sept., 1854. Latham, R. Gordon, M.D., F.R.S., Greenford, Middlesex.
6th Dec., 1849. Londesborough, The Lord, K.C H., F.R.S., F.S.A., Grimston, Tadcaster, and 8, Carlton House terrace, London.
9th Dec., 1852 MacAdam, Robert, 18, College square, Belfast.
27th Sept., 1854. Murchison, Sir Roderick Impey, G.C.St.S., M A., D.C.L, F.R.S., V.P.L.S., F.G.S., V.P.R.Geogr.S., Hon. M.R.I.A., Director-General of the Geological Survey of Great Britain and Ireland; Trust. Brit. Mus.; Hon. Mem. Acadd. St. Petersburgh, Berlin, Copenhagen; Corr. Mem. Inst. France, &c., 16, Belgrave square, London.

27th Sept., 1854. Owen, Richard, M.D., LL.D., F.R.S., F.L.S., F.G.S., British Museum, London.

P. 7th May, 1851. Pidgeon, Henry Clarke, 3, Westbourne villas, Harrow road, London.

27th Sept., 1854. Phillips, John, M.A., LL.D., F.R.S., Pres. Geol. Soc., Oxford.

27th Sept., 1854. Rosse, The Earl of, K.P., D.C.L., F.R.S., F.S.A., F.R.A.S., F.G.S., Birr castle, Parsonstown, Ireland.

27th Sept., 1854. Sabine, Major-General Edward, R.A., D.C.L.. Treas. and V.P.R.S., F.R.A.S., 13, Ashley place, Victoria street, London, and Woolwich.

27th Sept., 1854. Sedgwick, Rev. Adam, M.A., F.R.S., F.G.S., F.R.A.S., Hon. M.R.I A., Woodwardian Professor, Trinity College, Cambridge.

P. 6th Feb., 1851. Smith, Charles Roach, F.S.A., Member of the Roy. Soc. North. Antiq. Copenhagen; Hon. Mem. SS. Antiq. France, Normandy, Scotland, Spain, Newcastle, the Morini, Abbeville, Picardy, Wiesbaden, Luxemburg, Treves, Touraine, &c., Temple place, Strood, Kent.

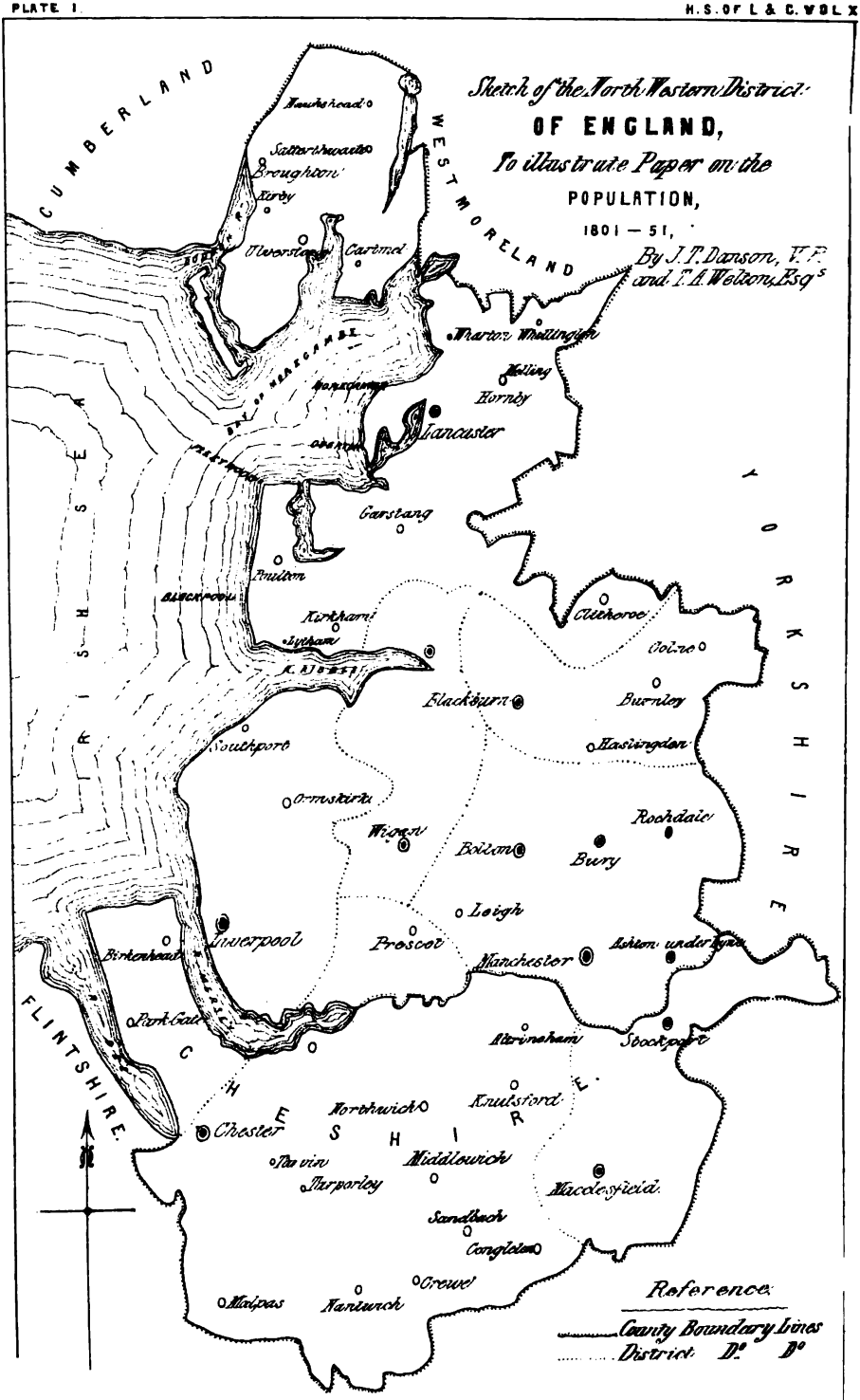
6th Feb., 1851. Turnbull, William B., F.S.A. Scot., 3, Stone buildings, Lincoln's Inn, London.

27th Sept., 1854. Whewell, Rev. William, D.D., F.R.S., F.G S., F.R.A.S., Hon. M.R.I.A., Corr. Member of the Institute of France, Master of Trinity College, Cambridge.

6th Feb., 1851. Williams, Rev. John, M A., Llanymowddwy, Dinas Mowddwy. Shrewsbury.

6th Feb., 1851. Willis, Rev. Robert, M.A., F.R.S., Jacksonian Professor, Cambridge, and 23, York terrace, Regent's park, London.

P. 27th Sept., 1854. Wright, Thomas, M.A., F.S.A., Hon. M.R.S.L., Member of the Institute of France; of the Roy. Soc. Northern Antiqs. Copenhagen; Hon Mem. of the Soc. of Antiquaries of France; Corresp. Mem. Soc. Antiq. Normandy; of Soc. Antiqs. Scotland; &c., 14, Sydney street, Brompton, London.


Sketch of the North Western District
OF ENGLAND,
To illustrate Paper on the
POPULATION,
1801 — 51,
By J. T. Danson, F.R.
and T. A. Welton, Esqrs
CUMBERLAND
WESTMORELAND
YORKSHIRE
LANCASHIRE
FLINTSHIRE
CHESHIRE
Keswick
Cockermouth
Broughton
Kirby
Ulverston
Cartmel
Morecambe
Lancaster
Garstang
Poulton
Blackpool
Kirkham
Preston
Chorley
Blackburn
Clitheroe
Colne
Burnley
Hasingden
Southport
Ormskirk
Wigan
Bolton
Bury
Rochdale
Leigh
Liverpool
Prescot
Manchester
Ashton under Lyne
Birkenhead
Park Gate
Stockport
Chester
Northwich
Knutsford
Tarvin
Middlewich
Tarporley
Macclesfield
Sandbach
Congleton
Crewe
Malpas
Nantwich
Reference
County Boundary Lines
District D° D°

TRANSACTIONS.

ON THE POPULATION OF LANCASHIRE AND CHESHIRE, AND ITS LOCAL DISTRIBUTION DURING THE FIFTY YEARS 1801-51.

By J. T. Danson, V.P., and T. A. Welton, Esqs.

(Read 10th December, 1857.)

Part Second.

In the first part of this paper we observed that the two counties, as they are now combined by the Registrar General, to form what is termed the "North Western division" of England and Wales, have an area of 1,874,000 acres. This is about 2928 square miles. And as England and Wales contain about 57,800 square miles, our own district comprises about one-twentieth part of that area. The population of the N.W. division, we also observed, was in 1851 about two millions and a half; and that of England and Wales having been, at the same date, very nearly eighteen millions, it follows that upon one-twentieth of the area, we had then about one-seventh of the population of this, the most densely peopled part of the United Kingdom.

The proportion is probably now different. During the fifty years in view, our section of the population had increased by 185 per cent., while that of England and Wales, on the whole, had increased only by about 100 per cent. We have no reason to suppose that these rates have, during the last six years, been materially changed. In round numbers, then, the inhabitants of Lancashire and Cheshire are probably now increasing in number at an annual rate, exceeding that of the country, as a whole, in the proportion of three to two.*

Further, at the beginning of the century (1801,) the *Town* population of our district, treating as such that portion of it dwelling in towns of 2000

* 185 Per cent. in 50 years is two and one-tenth per cent. per annum.
101 Do. do. one and four-tenths do.

inhabitants and upwards, formed only about two parts in five of the whole. In 1851 such town population formed, in number, two parts in three of the whole. The average *annual* rate of increase during the half-century on town population was 3·2 per cent., and that on country population only 1·0 per cent.

In reference to the *town* population of England and Wales, as we have not made so careful an estimate, we cannot speak with so much accuracy; but we believe the statements we are about to make are near enough to the truth for any practical purpose.

There were in the whole country, in 1801, not more than three hundred towns such as are included in our definition, with an aggregate population of about three millions: being about one-third of the total number of inhabitants. In 1851, the number of such towns had risen to nearly five hundred, with nearly eight millions and three-quarters of inhabitants: being about half the entire population at that period.

This increased proportion of town population was not evenly distributed over the whole country. In the divisions numbered in the last census I. to V. (including the south and east of England and the metropolis), the proportion of town population was, in 1801, about seven parts in eighteen; and in 1851, about nine parts in eighteen, or one half; while in the remaining six divisions (including the northern and midland counties, and Wales), the proportion was, in 1801, about five parts in eighteen, and had risen in 1851 to above eight parts in eighteen. In other words, the average annual rate of increase, during the half-century, in the whole country, was 2·2 per cent. on town population, and 0·9 per cent on country population. In the southern and eastern counties, it was 1·9 per cent. on town population, and 0·8 per cent. on country population; and in the northern and midland counties, including Wales, it was 2·5 per cent. on town population, and 1·0 per cent. on country population.

The proportions, as usual, vary more in single counties than in larger divisions of the country. Take, for example, Sussex, where the average annual ratios of increase on town and country population were respectively 3·7 and 0·8 per cent.; and Norfolk, where the corresponding figures were 1·4 and 0·7 per cent., respectively.

It is proper to notice here, that, were the ratio of increase equal in all places, densely peopled country districts would still from time to time be brought under our definition of a "Town," by the mere effect of general

progress; and, consequently, there would always be a larger increase in the number of dwellers in towns, than in that of inhabitants of country districts. This circumstance, of course, accounts, in part, for the high rate at which the town population of this country is, in fact, increasing. But its share in the general effect is only moderate, and the greatest part of the difference between town and country rates is occasioned by the high degree of rapidity with which town populations generally increase. To prove that this is the case, a few figures will suffice.

The population of the *country districts*, in 1801, which have in the succeeding half-century been covered by new towns, or the extension of those already existing, can scarcely be estimated at more (in 1801) than four hundred thousand persons, and was probably considerably less. Adopting this number, however, we have a population of 3,400,000 then living on the area occupied in 1851 by about 8,750,000 persons, These figures give an average annual rate of increase of 1·9 per cent. on the inhabitants of those localities which were covered in 1851 with a town population, and of 1·0 per cent. on the population of the remainder of the country, showing that the rate of increase on the one has been nearly double that on the other. Treating the north-western division similarly, we find the corresponding figures are 2·9 and 1·2 per cent., respectively, exhibiting a still greater difference.

The causes which have produced this comparatively rapid increase of the population in our own district, and especially of that portion of it resident in towns, were briefly referred to in the first part of this paper. The necessity of confining what we have to say, in this second part, to such limits as may enable us to say it in a single evening, will prevent our entering upon any such examination of these causes as, for their importance, they deserve.

One or two preliminary conclusions concerning them may, however, be accepted without much risk of error: as that they have been generated by the action of laws as certain and uniform in their operation as those recognised in any of the known sciences; and therefore that the same laws, so far as circumstances have permitted their exhibition, have been in action from the first gathering of mankind into a village, down to the present day. And, duly regarding the magnitude of the interests affected, we may also safely infer, that such knowledge of these laws as may be readily attainable is, in the present age, necessary to a right performance of the social duties of man-

kind, and especially of those attaching to the governments of the most densely peopled and most civilized countries; and further, that the duty of recognising and acting under these laws, has become especially incumbent upon the people and government of England—there being now collected on the soil of England the largest and densest masses of population, and, in the aggregate, the largest proportion of what is termed town-population, ever yet brought together upon a similar area.

The mental experience of mankind has well proved that there is but one trustworthy method of acquiring such knowledge: that we cannot commence an enquiry into the nature of such laws as are here referred to, with any rational prospect of success, otherwise than by first ascertaining the facts indicating the course and character of their action. The present series of papers is, so far as we know, the first systematic effort in this direction; and it is obvious that the locality chosen is not only especially important, but is also especially favourable to such an enquiry.

Already we have seen reason to infer, that the causes acting directly on the distribution of the population, in our own district at least, are mainly, if not wholly, of an *industrial* character: in other words, that the increasing density of the population in this part of the island, as well as its local distribution over the surface, has reference to, and is governed by, the local facilities which have, so far, been made available, or apparent, for obtaining profit for capital, and wages for labour. Doubtless, there are other causes; but they would appear to be of a subordinate character, and to have a comparatively slight effect. And whatever the causes referred to—whatever their number, variety, or comparative force, or whatever their particular range or tendency, or their relations to each other—it is too strikingly apparent to admit of doubt, that they are, collectively, at, or very near, the root of the changes in this district during the last half-century, which have made it more justly remarkable, in a productive and mercantile point of view, than any similar district throughout the world.

But to the task before us. Whatever may be the duty, or the conduct, of the nation at large, or of the government, we cannot, as intelligent beings, and as members of this Society, witness these changes without desiring to know something more of them—of what they have been, and of what they are likely to be—than is apparent on the surface; and our first step towards gaining such knowledge, is a careful examination and comprehensive analysis of such records as we yet possess of the changes themselves.

This conducts us at once into the midst of a statistical enquiry. The figures already made public by the Government, touching the increased amount and varied distribution of the population, are so prominent and so valuable as to claim our first attention. Hence the amount of labor bestowed upon the somewhat dry materials brought before you in the present paper. Apart from a steady contemplation of its ultimate purpose such labor would be wearisome; allied with this, we have found it full of the highest interest. Though careful, for the sake of sound reasoning, not to anticipate the fruit of the enquiry ere its first stage be passed, we have had frequent occasion to observe its intimate connexion with social phenomena not only of the deepest popular interest, but also affecting intimately the future prospects of the entire district. It is now well understood that increased density of population is invariably followed by an increase in the value of land; not only in the same locality, but in all those with which it has easy means of communication; and that with this increase of value commonly comes variety of use. And as on the one hand the inhabitants of such localities desire to share, as far as possible, the advantages to be derived from easy communication with less densely peopled districts, and, on the other, the inhabitants of such districts desire to share, so far as they may, the local advantages which have led to the increased density of population elsewhere, means of facilitating communication—as good roads, canals, and railways—have been sought with an avidity closely corresponding to the extent and rapidity of the changes, the details of which we have been examining. Canals and railways, once in use, may be said to be cheap to the public, and profitable to their owners, in some proportion to their traffic per mile; and this clearly has a direct relation to the numbers, the wealth, and the industry of the population collected within the districts they serve. And the variety of forms in which the economy, not only of the production and distribution of wealth, but of every process subserving the advancement of civilization, is promoted by a well-distributed increase of the population of a given area of country, such as our own district, is such as we may well be excused from attempting to enumerate, much less to depict. Let us, however, trust that enquiries even more dry and discouraging at the outset than this, need no recommendation to the members of the Historic Society, beyond the certainty that they tend to effect the beneficial purposes for which the Society exists.

Before entering upon the figures to be dealt with in the present paper,

it may be as well to say a word or two as to the tables published with the preceding section. It should be observed that the tables framed for this paper were prepared without regard to its subsequent division into three parts; and that as each part of the paper may occasionally have reference to any of the tables, their publication in sections may sometimes involve a necessity for reference to figures not at the time before the reader.*

Table II. relating to towns was framed, as to the population in 1851, by taking the groups of parishes and townships including, or containing within themselves, the whole of the towns referred to, and then throwing off, or deducting by estimate, from each, so much of the included area and population, as from a careful consideration of all the available data, might fairly be deemed to belong rather to the surrounding *country* than to the town. In framing Table III. the same process was used for the towns of 1801 and 1851.

Table IV. was differently framed. It will be observed, in the first place, that it includes only what we have deemed *large* towns; and these are only twenty-one out of the fifty-two towns included in Tables II. and III. Here, therefore, the object being merely to exhibit, roughly, yet with approximate accuracy, the comparative increase of the masses of population congregated under the influences special to *large* towns, as distinguished from the smaller towns and the rest of the country, no attempt was made

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* In Table II. a misprint occurs. In the fifth column of figures, and in the fifth line from the bottom, opposite "Crewe," 544 should be 5444. And in Table IV., in the sixth column of figures, opposite "Liverpool South," 42,639, should be 43,529. It may also be observed that there is a discrepancy between the statement of the total population of Lancashire and Cheshire, in 1851, made in Table I., and the corresponding statement in Table IV. The latter gives a number less than the former by 8970. The greater part of this difference arises from the population stated in Table I. including 3894 "Military and Marines in Barracks," and 4966 "Persons on board vessels," while these figures have been deducted in preparing Table IV., in order to make the comparisons between the several decennial rates of increase as accurate as possible, persons belonging to these classes not having been enumerated in the first four censuses. The difference yet remaining (110 persons) is the population of Tosside, in the Registration district of Settle, in Yorkshire, which was added to that of the Registration Division in 1851, in making Table I., because at all the censuses prior to 1841, it had been included with that of Sawley, in the district of Clitheroe, and was thus included in the aggregate population of the division in 1801. The same correction ought properly to have been made in Table IV., but its omission will not in the least affect the conclusions deduced; the amount of population being so small.

(as in the former instance, by estimating and deducting the proportion of "country" population, generally very small, included in the unbroken groups of townships and parishes), to exhibit so precise an account of the town population as in Tables II. and III. Hence the two accounts, if compared, will be found to differ. But the only instance of difference which seems to require particular notice is that detected on comparing Ashton-under-Lyne and Staleybridge, in Tables II. and III., with the same towns in Table IV. Here the adherence to *whole townships* (in Table IV.) has caused the township of Dukinfield (which, in fact, belongs about equally to both towns), to be thrown into Staleybridge. On the other hand, Ashton parish (which also belongs to both towns) is taken to represent Ashton town. The general result is that the population of both towns is overstated in Table IV. But this over-statement is comparatively unimportant in a Table only intended to shew the proportional increase; and the totals at the foot of Table IV. may be accepted as fair estimates. It will be seen, on examination, that they point to the conclusions indicated in the following figures:—

	Population.	Towns.		Population.	Rest of Lanc. & C'shire.	
1801	388,002	Increase.	Inc. %	484,661	Increase.	Increase %
	.....	98,121	25	.....	92,382	19
1811	486,123	.....	.....	577,043	.....	.....
	.....	163,244	34	.....	104,357	18
1821	649,367	.....	.....	681,400	.....	.....
	.....	273,278	42	.....	73,473	11
1831	922,645	.....	.....	754,873	.....	.....
	.....	294,241	32	.....	93,122	12
1841	1,216,886	.....	.....	847,995	.....	.....
	.....	337,250	28	.....	79,836	9
1851	1,554,136	.....	.....	927,831	.....	.....
	.....	.....	.....		.....	.....
	Inc. 50 yrs.	1,166,134	301		443,170	91

It will be observed that neither the *rates of increase* nor the *periods of greatest increase* are the same, or nearly the same, for the large towns and for the rest of the country.

Table V., and also Table II., may be regarded as summaries of tables of a more detailed character, which are intended to be published with this or with the concluding section of the paper.

In order that what we are about now to say, as well as what we have said, of the growth of the population in different parts of the division, may be the more readily comprehended, we annex an outline map of the two counties. The unbroken lines show the outer boundaries of each county. The dotted lines show the sub-divisions made in preparing the present paper, in order to mark the areas within which particular changes are found to have taken place. Thus the first dotted line, running from the north bank of the Ribble, a mile or two below Preston, and through Salwick, Barton, Inglewhite, and Dilworth, to the river Calder, along that stream to Simonstone, and thence along the crest of the Pendle-hill, cuts off a large section of Northern Lancashire, and forms the southern limit of what we have termed the Northern region.* Another dotted line, leaving the last where it crosses the southern end of Longridge fell, and running through Elston and Pleasington to Rumbles moor, and thence by Holcombe moor and Brandwood moor to Todmorden, denotes one section of the great eastern region, which, for the sake of distinction, we may term the *Blackburn* district. A third dotted line, leaving the last at Rumbles moor, and running nearly due south, through Rivington, Lostock, West Houghton, and Hindley Green, and so through Golborne to the south side of Garswood park, and there turning north and running by a zigzagged line to Rufford, and so by the course of the Douglas back to the Ribble, marks out another

* The boundaries of the counties proper, and of the Registration counties of Lancashire and Cheshire, do not correspond precisely with each other. Thus, the northern region of the north-western division, as above described, takes in a portion of Yorkshire (included in the Registration district of Clitheroe), of large extent but thinly peopled. The eastern region, in a similar manner, is deprived of the township of Todmorden (which is included in the Registration district of the same name, placed by the Census arrangement in Yorkshire); and of the township of Disley-Stanley (which is included in the Registration county of Derby), the populations of which townships amounted in 1851 to 9924 persons. The southern region also includes the parish of Biddulph, in Staffordshire, and that of Hawarden, in Flintshire; but is reduced by the township of Malpas, and several others of less consequence, being included in the Registration county of Denbigh.

remarkable section of the eastern region, which we may term the *Wigan* district. The latter half of the same line, when continued from the Mersey to the Ribble, defines the western region within Lancashire. Another short line, leaving the last at Haydock park, and running, by Tait hall, to the Mersey at Glazebrook, completes the outline of the rest of the eastern region within Lancashire; and, so far, marks out its third and greatest, or *Manchester* district.*

It will now be observed that a portion of Lancashire, including the towns of Warrington and Newton, and the outline of which is completed on the map by drawing a line from Garswood park, by Parr and Bold Hall to Runcorn Gap, is thrown into the southern region. It only remains to be observed that a similar but larger section is taken from Cheshire to complete the Manchester district of the eastern region; and that the peninsula of Wirrall, between the Dee and the Mersey, in the same manner completes the western region. The first of these sections is marked by a dotted line leaving the Mersey at Cheadle, and running through High Grove, Handforth, and Fulshaw, to Ollerton Common, thence to the river Dane at Eaton Hall, near Congleton, and along the course of that river to the borders of Staffordshire. The second is limited by a short line drawn from Farnton on the Mersey to Shotwick on the Dee. The grounds on which these divisions have been made will be made apparent in the third section of this paper.

It is to be regretted that the *township* boundaries are very seldom laid down upon our county maps. They will be found upon the six-inch ordnance map. This, though itself too large for reference, except where areas of very limited extent are in question, now affords the requsite data for those who may be disposed to improve the construction of our county maps; and these would be much increased in value, were the boundaries of the *Registration districts*, in all cases, carefully laid down upon them.

The arbitrary divisions on the annexed map have no further reference to existing local boundaries than is rendered inevitable by the necessity for including or excluding whole registration districts, when no more minute division could conveniently be made with the existing record.

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* It will be observed that this is not coincident, in area, with what has been termed "the Manchester district," in a prior paper, by Mr. Danson, published in the Transactions of this Society.

The first table annexed to the present paper is numbered VI. It contains a list of fifty-three towns, or of fifty-two, if Liverpool north and south (Liverpool and Birkenhead, with a part of the neighbouring townships) be deemed, practically, one town.

The increase, per cent., on the population of each town in each of the five periods of ten years from 1801 to 1851 is stated in vertical columns; and the towns are arranged in the order suggested by the period of greatest increase. In other words, the five successive numbers found opposite the name of each town indicate the number of persons added, in each, during the corresponding ten years, to every hundred persons in the town at the beginning of the ten years; and those towns are placed together which showed their largest rate of increase in the same ten years.

In the first decade (1801-11) seven towns showed their largest decennial increase: Kirkham, in the northern region; and Colne, Leigh, Atherton, Horwich, Bolton, and Middleton, in the eastern region. But only one of these (Bolton) had, even in 1851, so many as ten thousand inhabitants.

In the second decade (1811-21) twelve towns reached their highest rate of increase: Burnley, Accrington, Haslingden, Over Darwen, Blackburn, and Tyldesley, in the eastern region; Ulverston and Clitheroe, in the northern; Prescot, in the western; and Chester, Knutsford, and Nantwich, in the southern regions. But only three of these (Burnley, Blackburn, and Chester) had, in 1851, so many as ten thousand inhabitants.

In the third decade, however, we have as many as eighteen towns culminating in their rate of increase; and these nearly all towns of a peculiar order. Lancaster is the only one in the northern region; but it is one of the most important there. In the eastern region there are Manchester, Staley-bridge, Hyde, Stockport, Macclesfield, Oldham, Bury, Rochdale, and Heywood. In the western, Liverpool north and south, and Southport. And in the southern, Warrington, Runcorn, Northwich, Congleton, and Sandbach. Of these eighteen towns, no less than fourteen had, in 1851, upwards of ten thousand inhabitants.

In the fourth decade, eight of the towns in our full list showed their highest rate of increase. Three of them had ten thousand inhabitants in 1851. One, however, (Fleetwood, at the mouth of the Wyre), was entirely new; and of Blackpool, a watering place, on the coast, a few miles further south, it is to be observed that its increase, in 1841-51, is not correctly

exhibited by the figures, owing to the census of 1851 having been taken comparatively early in the year. These are both in the northern region. In the eastern, we have Preston and Ashton-under-Lyne, and Chorley, Radcliffe, and Eccles. And in the western region, the single town of St. Helens.

In the fifth and last decade, the remaining eight towns culminated; but only one (Wigan) had ten thousand inhabitants at the end of the fifty years in view. There were three others in the eastern region: Bacup, Rawtenstall, and Hindley—three in the southern: Frodsham, Altrincham, and Crewe; and, in the western, one: Ormskirk. Crewe was a new creation, arising from the junction of the Manchester and Birmingham and the Chester and Crewe lines with the Grand Junction, at a point where no town existed, and railway convenience required one.*

These figures would alone go far to prove that some extraordinary development of the industrial energy of the district took place in the period 1821-31.

It would carry us too far to enter upon any collateral illustration of the movements here indicated. But, upon the single point touched in the last sentence, and which is certainly one of the most salient of those now presented to you, it may be stated, that the average amount of shipping paying tonnage duty in the port of Liverpool (the port of our district) in the three years closing each decade, was:

	Tons.
In 1809–11	646,000
„ 1819–21	837,000
„ 1829–31	1,464,000
„ 1839–41	2,343,000
„ 1849–51	3,637,000

Among the towns most remarkable for their rapid growth in the last decade (1841–51) we find Birkenhead (or South Liverpool) far before all the rest; and it is equally so in the two decades immediately preceding. But

* It may here be asked whether, in calculating the per centages for Table VI., we have made use of the town populations estimated for Table III., or those found in Table IV. The answer is *the latter*. Perhaps, nay probably, the former would have afforded the nearest approximation to the truth. But we have preferred taking numbers obtained from actual enumeration, to those arrived at by further estimates of our own, as affording a *safer* basis of calculation.

as has been shown in a previous paper, read before this society, the two towns on the opposite banks of the Mersey have become one in all that affects their growth; and cannot be correctly regarded apart.

The next town claiming notice on this ground is Burnley. This town displays throughout the fifty years the highest combination of steadiness with rapidity of growth. The towns next in order, selected for their display of the same characteristics, and arranged in the order in which they have excelled, are Runcorn, Preston, Rochdale, Oldham, and Liverpool. In all these places, the same or similar influences would appear to have been operating in the same direction, with considerable force, and with little variation of it, during the whole half-century. And, assuming that no reason to the contrary be apparent, it may be reasonably expected that the growth of population here marked will be continued. It can scarcely be otherwise than that land in or near these towns has been steadily rising in value, during the whole period, and is likely to continue to do so.

Bolton might have been placed in the same class, had not its *rate* of growth been falling slowly, but steadily, throughout nearly the whole fifty years, till it has apparently settled at about 20 per cent. in ten years.

Blackburn, also, has grown rapidly, though not steadily, having much abated this rapidity in 1821–31, and again in 1841–51. Bury shows a similar drawback in 1811–21, and in 1841–51. Ashton-under-Lyne also slackened its speed of growth in 1841–51.

Many towns, which exhibited a rapid growth in the first thirty, or even the first forty years of the half-century, have, in the last ten or twenty years, afforded indications of a decided check. The most important of these are Staley-bridge, Hyde, and Stockport, on the Tame; and Macclesfield and Congleton, which places (both being sustained by the silk trade), seem to wax and wane together. In the same list we may place Horwich, Clitheroe, Accrington, Heywood, and Chorley; the last showing an actual decrease of population in 1841–51. Southport, also, seems to be coming to a stand-still; but this may be only seeming. The census of 1851 was taken in March, that of 1841 in June; and the change must have seriously affected the watering-places in any comparison of the two enumerations. Blackpool is, of course, similarly affected.*

* The past rates of increase and probable future of watering-places may best be known by a reference to the number of houses erected, and in progress, at the period of

Some of the towns in this Table VI. may be termed "new," in the sense of having, though in existence in 1801, advanced, since that date, to the point at which they became towns according to the definition of that term already stated. And some others are wholly new, as occupying sites on which, in 1801, there was no considerable aggregation of human habitations. Kirkham, near Preston, is an instance of the first description. It was not in 1801, very far short of the conditions required by our definition of a town. It has since complied with these conditions, but remains a small town, and seems likely to do so. Others, like Fleetwood and Crewe. are decidedly of the second description.

The greatest *relative* increase, in the fifty years, is seen at Staley-bridge and Hyde, Ashton-under-Lyne, Burnley, Clitheroe, Leigh, Rawtenstall, Over-Darwen—at Crewe, and at Fleetwood and Blackpool. In all these eleven towns (and they are nearly all *new* towns in the second sense of the term), the population of 1851 is more than seven-fold that found on the same area in 1801. The greatest *absolute* increase has, as might be expected, taken place around what were, in 1801, and still continue to be, the great towns—the principal and long-established centres of employment.

Of the eleven new towns last mentioned, three (Ashton, Staley-bridge, and Hyde), lie together in the Tame valley. The rates of increase of the two latter culminated in 1821–31; it is also to be observed that these two increased, in 1841–51, by less than 20 per cent. Ashton culminated in 1831–41; but in the last decade its rate was only 22 per cent.

Four more of the eleven (Burnley, Rawtenstall, Clitheroe, and Over-Darwen) lie in and north of Rossendale. All these, excepting Rawtenstall, culminated as early as 1811–21. The exception arises from what seems an extraordinary renewal of growth in Rawtenstall, in 1841–51.

Another, Leigh, is of little importance. Its greatest growth was in 1801–11. Crewe, Fleetwood and Blackpool need no further comment.

Among the *old* towns, the most prominent, in point of *relative* increase, are Oldham, Preston, and Liverpool.

The *lowest* rates of increase, during the fifty years, are in Kirkham,

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each enumeration. The rate of increase thus obtained for Southport, in 1841–51, is 20 per cent., and that for Blackpool, 83 per cent.; while in the former place the number of houses, in course of erection, increased from 5 in 1841 to 19 in 1851; and in the latter, the corresponding advance was from 5 in 1841 to 21 in 1851.

Tyldesley, Knutsford, and Frodsham—all four termed "new," because they passed the limit after 1801, and so entered the list as towns by definition. Also in Atherton, a place of little importance; but a town by definition in 1801. Also in Nantwich, the ancient seat of the salt manufacture of the Weaver Valley. And, lastly, in the ancient capitals of Chester and Lancaster, which are thus seen to be retreating further and further from their ancient eminence.

The Country Districts.

These are so numerous, that any attempt to describe the progress of population in all of them would be certainly difficult and, in all probability, unintelligible. We have therefore selected * for treatment in detail, those most remarkable for density of population, or rapidity or slowness of increase. These number two hundred and four in all; and may be taken to represent the most remarkable features of the movement of the population of the country districts in each region.

Included in these two hundred and four selected districts, are all the townships skirting the Pendle hill. The peculiar inequality of progress in these townships, which will presently be adverted to, afforded the motive for thus including them all, and so presenting a complete view of the movement of population in that particular locality. It is also to be borne in mind that the general conclusions which were to be derived from a consideration of the rates of increase or of decrease of the populations of the selected localities could not be anticipated when the selection was made. This was made upon a general view of the whole number, as the ratios of decennial increase had not then been calculated.

These districts, as might be expected, vary greatly in size. And this, in some degree, obstructs the operations of the statist. Where the district is large, it is obvious that considerable, and even important, local variations of density, and also of increase or decrease of population, in any given period of time, may occur, wholly or partially within its limits, and may thus remain hidden, or be made apparent only so far as they affect the total for

* In making the selection, some regard has been had to magnitude and general importance; and no district has been taken, with a single exception, which is not altogether "out of town." Thus the calculated ratios, which will be found in the tables annexed, are always based upon actual enumerations, and are not affected by any process of estimation. In the appendix will be found a memorandum of the Registration districts in which these two hundred and four selected country districts are situate.

the entire district. The farther we carry the subdivision of the localities submitted to the census, the more completely we develope these local changes. But there is a practical limit to such subdivision, in the labour involved, as well as in the necessity, imposed upon the officers charged with taking the census, to observe such boundaries as are well known and recognised, and thence easily referred to as of record. And even if these difficulties were not interposed, it would be inexpedient to carry the subdividing process beyond certain limits, which can only be determined from a careful consideration of the circumstances in each case. Country districts of such limited extent as to contain but a few hundreds of inhabitants are liable to apparent variations in population of a very striking character, in the utter absence of any noticeable change in their actual condition. The temporary absence of one of the principal families, the holding of a fair or village feast, the presence of a horde of gipsies, or some accident equally trivial, suffices relatively to raise or depress the population to an extent which in larger districts would have an important meaning.

Of the two hundred and four districts selected for investigation, one hundred and seven showed a continuous increase of their population at the end of each of the five periods of ten years now before us. The remainder (ninety-seven) showed in some of these decades, an increase, and in others a decrease.

But looking first at the whole number (two hundred and four) and marking, as to each district, the decade in which it showed the largest increase per cent, or *culminated in its rate of increase*, we find they divide themselves thus:—

In 1801–11	68
„ 1811–21	55
„ 1821–31	28
„ 1831–41	33
„ 1841–51	20
	204

We have already (ante p. 7) marked the per centage rate of increase for the whole population of these and the other country districts during the same period; and we have now to observe a remarkable coincidence between that and the result shown above. While the number of districts exhibiting

their highest rate of increase was gradually falling thus:—

68—55—28—33—20

the rate of increase of the entire country population was similarly falling thus:—

19—18—11—12—9

In Table VII. (annexed) will be found a list of the one hundred and seven districts of continuous increase, divided into five sections, corresponding with the five decades, each locality appearing under the date to which its highest rate of increase is to be referred, and the actual rate of increase for each district being shown for each period of ten years.

Table VIII. forms a similar list of the remaining ninety-seven townships, similarly arranged, with reference to their periods of greatest *increase*. And in Table IX. this list is repeated with a different arrangement, and so as to exhibit, as to each district, the period of greatest *decrease*.

Referring to Table IX. we find that the number of districts showing a decrease (or their greatest decrease) of population, increased, during the fifty years in view, in the following order:—

The ten years 1801–11	saw the	greatest	decrease in.....	9
1811–21	"	"	.....	4
1821–31	"	"	.....	15
1831–41	"	"	.....	24
1841–51	"	"	.....	45
				97

And a careful examination of these tables leads to the conclusion that the increase of the country population was decidedly more rapid and more general in the first twenty years than in the last thirty.

To treat so wide a subject much in detail would here be impossible. The tables are before you, and, in their printed form, will afford you, within a moderate compass, the means of ascertaining much that is interesting and important, but which we cannot here venture upon stating. A few remarks, however, may be offered upon each decennial period.

1801–11. This was undoubtedly the period of greatest increase in these country districts. The number of the selected two hundred and four in which the population increased more rapidly in this than in any other

decennial period was sixty-eight, or exactly one third of the whole. Of these no fewer than sixty were in the eastern and southern regions; and in the former were most numerous in the Wigan and Manchester districts.

During the same period fourteen districts decreased in population. Eight of these, also, were in the eastern and southern regions, and six in the western. But of these six nearly all were in the peninsula of Wirral, and accompanied, and probably promoted, a corresponding increase of population in districts then more conveniently subservient to the commerce of the Mersey. We shall presently see this movement entirely and strikingly reversed.

1811–21. This was also a period of wide and rapid increase. Fifty-five districts acquired their highest rate; and forty-seven of these were in the eastern and southern regions.

Six districts, at the same time, decreased more or less.

1821–31. Now we begin to detect the approach of a different state of things. Only twenty-eight country districts reached their highest rate of increase. But these were, some of them, significant. We find twelve in the eastern region: and of these no fewer than five (Denton, Haughton, Reddish, Newton, and Werneth), were in the Tame valley. Seven others (including Kearsley and Orrell) were in other parts of the eastern region. Eight were in the southern, seven in the western, and one only in the northern region.

At the same time twenty-nine districts showed a *decrease*. The most striking of these were—

	Decrease per cent.		
Longworth	25	Situate	N. W. from Bolton.
Heyhouses	17	,,	South side of Pendle Hill.
Flixton	13	,,	Near mouth of river Irwell.
Dilworth	10	,,	North of the Ribble
Downham	16	,,	North side Pendle Hill.

1831–41. Here the change is more strongly manifest. The number of districts reaching their maximum rate was only thirty-three; and thirty-nine decreased.

Among the increasing districts were four north of Rossendale: Church-Coniston, Thurnham, Lytham, and Farington. Farnworth, and five other

districts, were near Bolton. Near the Tame were Droylsden, Godley, and Bredbury. In other parts of the eastern region five more. In the western and southern regions fifteen.

The thirty-nine diminishing populations were differently situated. Members of our society resident in or near, or otherwise acquainted with, these localities, or any of them, may perhaps be able to explain the causes of both movements. On the sides of the Pendle hill, and in the valley of the Henburn river, we find no less than eleven of these diminishing districts. And among the remaining twenty-eight, the most remarkable appear to be—

	Decrease per cent.	Situate.
Longworth	17	N. W. of Bolton.
Higher Booths	16	Near Rawtenstall.
Entwistle	21	N. of Bolton.
Butterworth	10	Near Rochdale.
Buglawton	11	Near Congleton.
Wheelton	12	Near Chorley.
Edgeworth	22	N. E. of Bolton.

Two of these (Higher Booths and Wheelton) had before been increasing rapidly.

Less remarkable in this decreasing list, but worthy of notice, were the districts of Chadderton, Crompton, Gorton, Ashton-in-Mackerfield, Orrell, Lowton near Leigh, Middlewich, and its suburb, Newton.

1841–51. Twenty country districts reached in this period their highest rate of increase. Of these the furthest north is Dalton-in-Furness. This may be traceable to the new pier at Piel and the connected works. The next is Fulwood near Preston. Then eight districts around Manchester: Little Lever, Worsley, Prestwich, Moston, Gorton, Levenshulme, Tintwistle, and Micklehurst: some of these would seem to have grown rather as suburbs of Manchester. Towards Macclesfield—Poynton and Chorley. In the southern region, six:—Haydock, Sale, Bowdon, Lymm, Barnton, near Northwich, and Odd Rode, near Congleton. And in the western region, Rainford, between St. Helens and Ormskirk, and Widnes, on the St. Helens and Runcorn Gap Railway.

But the number of districts in which the population was absolutely diminished in this period amounted to fifty-nine. More than one-fourth in number

(sixteen) of these districts lay again near the Pendle Hill, and in the Henburn valley; and in both quarters we observe the same peculiarity, and one of which we have noticed previous instances: the groups of townships thus showing a diminution of their population in 1841–51, had previously shown a rapid increase.

Then, on the moorlands north of Bolton and Bury, we have seven more of these diminished townships:

	Loss. per cent.
Tottington, higher end	14
Musbury	11
Edgeworth	28
Entwistle	12
Quarlton	2
Walmersley	2
Ashworth	15

And near to these, on the south, were four more, which showed a rate of increase so slight as to indicate that the greater part of the natural increase of the population had there also been removed by migration. These were—

	Increase. per cent.
Longworth	2
Bradshaw	3
Tottington, Lower end	8
Birtle-cum-Bamford	6

So that much of the hilly country north of Bolton and Bury was, during this period, being slowly denuded of its population.

North of Wigan it was much the same; the districts of Adlington and Blackrod, each showing a decrease of four per cent.; and that of Haigh, a decrease of ten per cent.

And in other places a similar movement is plainly perceptible. Blatchinworth, (north of Rochdale), lost thirteen per cent. Crompton (near Oldham) lost five per cent. And Wheelton (N. E. of Chorley) lost twenty-two per cent., after having lost twelve per cent. in the ten years immediately preceding.

In the northern region, Garstang (on the Wyre) lost eight per cent.

Great Neston, in Wirral, lost ten per cent.

And Middlewich, and Newton in its neighbourhood, each lost one per cent.

The last mentioned loss may seem almost too small to be worthy of notice. In truth it is not so. And as the mode of regarding these figures which is apt to suggest that it is, is not only erroneous, but so far erroneous as to render those who may adopt it practically blind to some of the most remarkable of the changes here pointed out, we may as well explain why. It will be remembered, that during each of the five periods (of ten years each) composing the half-century in view, there was a considerable increase of the population of the whole kingdom. Had this increase been equally divided over its entire area, each locality would, at the end of the fifty years, have found itself covered with a population about twice as large as it had at the beginning. The general increase of 1841–51 would, so divided, have given to each locality an increase of more than twelve per cent. It is certain that the natural increase (or the excess of births over deaths) was considerably greater in the country districts than in the towns. Hence, local circumstances apart, we might reasonably expect to find considerably more than twelve per cent. added to the population of each such district, between 1841 and 1851, had there been no loss by migration. And hence, further, where we find an absolute diminution of the population of a country district, we must, in order to arrive at the probable actual effect of migration, add to such loss more than twelve per cent. for the natural increase of the same interval. The total thus obtained it is that represents the real disturbance, and measures the force of the circumstances, to bring about a better knowledge of which, as they operate upon a large scale, is the primary purpose of these papers.

The principal facts thus elicited from a very cursory consideration of the Tables VII., VIII., and IX. may be summarily repeated in the form of a Table, thus:—

Decennial periods.	Localities in which, and periods at which, Country Districts reached their highest rate of increase.						Localities in which, and periods at which, a decrease of population took place in Country districts.					
	Northern Region.	Eastern Region.			Southern Region.	Western Region.	Northern Region.	Eastern Region.			Southern Region.	Western Region.
		Blackburn* Section.	Wigan Section.	Manchester Section.				Blackburn Section.	Wigan Section.	Manchester Section.		
1801–11	5	8	15	23	14	3	..	3	..	3	2	6
1811–21	4	17	6	17	7	4	..	..	..	2	3	1
1821–31	1	3	1	8	8	7	4	6	5	7	5	2
1831–41	3	..	3	12	6	9	5	11	6	11	5	1
1841–51	1	..	1	10	6	2	9	14	6	10	9	2

Increase of population in the country districts was the rule, almost invariably, in 1801-11—only fourteen out of the two hundred and four showing a decrease. Decrease, in its most absolute sense, was not the rule, but was so general as to include nearly one-third (in number) of these districts in 1841–51. And were we to adopt the truer definition of decrease which regards as such all shortening of the average increase traceable to migration, the rule prevalent at the end of the half-century would probably be found to be precisely the reverse of that prevalent at the beginning.†

Turning, with a like view, to the country districts of greatest *increase*, we find that a large number of them have, in some decennial period of the fifty years (and a few even in several such periods of that term) increased their population by upwards of forty per cent., or at a rate fully three-fold that attributable to the average excess of births over deaths.

* The Registration districts which are comprised in each of the four regions are stated in Table I. It remains to be explained that the *Blackburn* section of the eastern region is nearly equivalent to the Registration districts of Burnley, Haslingden, and Blackburn. It includes, however, a part of the Registration district of Preston, in which the townships of Dilworth and Ribchester are situate. The *Wigan* section includes the remainder of the registration district of Preston, and those of Chorley and Wigan: also a portion of the registration district of Bolton in which the township of Sharples is situate. The remainder of the registration district of Bolton, with those of Bury, Leigh, Rochdale, Oldham, Manchester, Salford, Barton-on-Irwell, Chorlton, Ashton-under-Lyne, Stockport and Macclesfield, constitute the *Manchester* section.

† It may be noticed, that in eight out of the two hundred and four districts, there was a decrease in population in each of the last *three* intervals. These were Garstang, Twiston, Downham, Roughlee Booth, Goldshaw Booth, Barley-with-Whitley Booth, Dilworth, and Longton, all situate in the Blackburn section and the northern region except the last; and nearly all adjacent to the Pendle Hill. In thirteen more there was a decrease in the last *two* intervals.

In 1801–11 there were thirty-five such districts;—in 1811–21 there were twenty;—in 1821–31 there were twenty-three;—in 1831–41 there were twenty-six; and in 1841–51 there were sixteen.

Some of these districts are worthy of especial notice.

Pendlebury, a district west of the river Irwell, and three or four miles W. N. W. of Manchester, increased by more than forty per cent. in four successive decennial periods—in short, in all except the last.

Others increased thus rapidly during three out of the five decennial periods before us:—

Church-Kirk in the first, second, and fourth.
Weston, in the second, third, and fifth.
Much Woolton, in the second, fourth and fifth.
Newton, near Hyde, in the first, second, and third.
Litherland, in the third, fourth, and fifth.
Hoose, in the first, third, and fourth.

And nineteen other districts will be found (see tables annexed) to have increased at this high rate in more than one of the five decennial periods before us.

Country Districts generally*—Increase in the Fifty Years, 1801-51.

Table X (annexed) contains a list of the sixty-two country districts which showed the highest rate of increase per cent., taken on the previous population, in the entire fifty years, They are arranged in the order of this increase. And, in other columns, are shewn the additional number of persons, *per square mile*, thus brought within each district; and also the successive decennial steps by which the ultimate increase was attained. The highest addition made was in Hoose (882 per cent.), and the lowest in Marsden (161 per cent.) Both these, however, were places of little importance—Hoose lying at the western extremity of the Wirral peninsula, and Marsden (Great and Little) some three or four miles south-west of Colne, on the Leeds and Liverpool Canal, and also at one of the extremities of the great District before us. Among these sixty-two districts, however, though not at either extremity of the list, will be found most of

* We here leave the 204 selected districts, of which we have just treated, and return to a consideration of the entire mass of country districts referred to in Table V.

those which, while retaining, by the scattered form of their population, the character of country districts, have been most affected by the changes we are now contemplating. We desire therefore to recommend to the especial attention of those whose local knowledge may enable them to throw light on the local changes here marked, and to point to their causes, this Table (X) as well as (for reasons to be presently stated) the three immediately following.

It will be observed that of the sixty-two districts as many as thirty-six ended with rates of increase less rapid than those with which they began; and twenty-six with equal or higher rates. The periods of culmination of rate of increase were—

As to 15	districts,	in 1801-11.
8	„	1811-21.
12	„	1821-31.
19	„	1831-41.
8	„	1841-51

Table XI contains a list of thirty country townships, parishes, &c., *which started, in* 1801, *with populations peculiarly dense.* They ranged from 1,577, down to 608 per square mile, at that date. It will be seen that in only eighteen of these was the increase of population, in the following fifty years, more than 100 per cent. In eighteen out of the thirty the rate of increase in the last decade (1841-51) was less than in the first (1801-11); and in the other twelve it was equal or higher.

In Table XII will be found a list of the thirty country townships, &c., *in which the highest density of population had been reached in* 1851. They range from 6681 down to 1346 per square mile. The highest rate here shown closely approximates the minimum fixed upon for defining a Town population (see Part I of the present paper, Trans. vol. ix. p. 199.) Two thousand persons on an area of 180 acres afford 11.1 persons per acre; and 6681 per square mile give 10.4 persons per acre. It is obvious that the degree of density attained by several of the townships in this Table (XII) is inconsistent with the preservation of the ordinary characteristics of a country population. And it here may be worthy of attention that the reduced effect of space in diminishing human intercourse, under the action of modern facilities for rapid travelling and the conveyance of goods, newspapers, letters, and telegrams, tends strongly to promote the spreading of

a portion of the population who crowd the streets, offices and factories of our towns by day, over wide areas of country during the evening and night. And the definition of local habitation, for the purpose of the census, by the place of sleeping on the night preceding the day of enumeration, gives full effect (in the decennial record) to this growing change in the habits of a considerable section of our town population.

In Table XIII is a list of the thirty country townships, &c., *which most increased the density* of their population in the half-century. The highest clear addition was made at Tonge (near Middleton), 5441 per square mile being added, by an increase, per cent., of 439.*

We have now laid before you, in a very summary manner, but at as great length as the compass of an evening meeting will permit, a sketch of the most remarkable of the local variations of the very general and rapid increase of population in this our district of Lancashire and Cheshire during the only period (of fifty years) for which materials applicable to the formation of such a sketch yet exist. And in the Tables of figures we have appended to this and the preceding paper, will be found the means of extending, with labor comparatively small, the researches we have made, and of giving to our sketch, so far left vague for lack of space, such additional detail as may satisfy the wishes of those who are interested in the progress of particular localities.

The subject is, we know, not an inviting one to most minds. And the limits within which we have been compelled to deal with it, have not permitted us to exhibit more than its hardest and driest features. It were idle to regret this. It could not be otherwise. Yet we may be permitted now to add a word or two in a wider and more general sense.

Had the subject not possessed for us an interest far other than merely statistical, we should not have taken it up, still less have bestowed upon it the labour of which you have, in these papers, but faint and imperfect evidence.

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* In our first instalment of this paper, p. 200, vol. IX, we state the *towns by definition* in 1801 to be *twenty-nine* in number, and to contain a population of 364,000. These figures (as appears by Table III. at the end of that part), should have been *twenty-six* and 337,000. The error arose from an accidental reference to Table II. in lieu of the right one. It will also be noticed that the definition previously given of "a town" has not been made use of in the comparisons on pp. 205–7. This latter circumstance, however, though it deserves to be mentioned, is of small importance.

To us it seems, and doubtless, too, to you, that the mere manner of living of our race, when placed under new conditions of existence, should excite something more than curiosity. Fitly contemplated, it affords exercise for the loftiest of our intellectual faculties, and calls into play feelings of all others the most strongly conducive to the elevation and refinement of our nature. Here, however, we have more than a mere change. The movement of the population of this part of the British islands has assumed, and for a long period has maintained, a continuous and definite direction, bringing together a very large number of persons under circumstances of which the history of the world affords no previous example. It now presents to us a portion of the great drama of human existence on earth, itself, indeed, of no great magnitude, in either time or space, but obviously of momentous consequence to the immediate future of our country, and to the nations who are ruled by our countrymen; and thence, and otherwise, having a most important bearing on the affairs of the world at large.

We need not descend into detail. Put aside the individual motives which, for the last fifty or sixty years, have been bringing down from the breezy uplands and the bleak hills of our northern counties, from out the narrow valleys of North Wales, and from Ireland, and training to the life and toil of towns, the many hundreds of thousands of men and women who now, with their progeny, fill, or cluster around, the busy, noisy, smoky factories covering so great a part of our district—put aside the desire for wealth which prompts the few, and the mere desire to live which prompts the many—we have here, by whatever means produced, a spectacle such as no part of the earth has ever before presented. We know it. Yet—and even therefore—we know it not. We know it too well with our eyes to know it well with our brains. And, in plain words, what is it? A mass of population probably not less than that of all Scotland as it is at this hour—probably not less than was ruled by Solomon in all his glory—is living, and by occupation and by habit fixed, upon an area which, were it all as fertile as its richest tracts, would not, were they confined to it, afford sustenance for one-third of their number. In other words, some two and a half millions of human beings are, now and here, directly dependent upon commerce with all the world for their very existence. Their customers are many and various. All counted, they may be six hundred millions in number; and they are of every nation on earth. And the human body is not more dependent upon the commerce of its lungs with the atmosphere, than are these

the people of our great manufacturing district upon a like free communication with their customers abroad.

As read by some, this indicates a great and perilous necessity. Great it is; but not perilous. It also indicates a great mutual dependence. And, further, a great security for the future enlightenment and freedom of the race. The means whereby we spin and weave cotton, obtaining first the raw material, and then exchange the manufactured product for the means of living, and of enjoying (and abusing) life, are also means to ends greater far than these. We export more than our manufactures. We give, perhaps, more than we sell. For at this great centre of so much human intercourse, some good and great influences are paramount; and must needs be kept so, or it would speedily cease to be such a centre. Here thought and speech are free; and are communicated by methods we handle boldly, and are daily improving; but do not yet know all the powers of. Here industry, well directed, is permanently and perpetually exhibited as the source of great physical blessings and great pecuniary power. Here, too, the best known modes by which men may govern themselves, and each other, so as to knit together into national power the will and the intelligence of individuals, are displayed in free action; and all their results, good and evil, are daily presented to view, And surely no man fitted to observe and to reflect on the ways of his fellowmen can come hither from abroad, as so many must, on mercantile errands, come, and not carry away truer and stronger impressions, not only of the real sources of human power, as they are yet known to us, but something also, of the most profitable methods of employing, and the most apt means of abusing, these powers.

Granted that the end aimed at by the many builders of the edifice is commonly but low. Here a fortune, and admission to another rank of society, with other ways of wasting time. There, good wages, and enjoyments of a coarser kind. "Heaven shapes our ends, rough-hew them how we may." The end attained, which no man aims at, or could attain by any aiming, is a vast increase of the means of augmenting human civilization—an increase, which must go on, of means, which we may rest assured are not accumulated to be wasted—though the ultimate extent and efficiency of these means we of this generation are perhaps no more fitted to estimate than we are as yet capable of wisely wielding them. For our task is of the time; and our wisdom in the doing of it, and no other. Its forms are as various

as our individual powers; and some of these offer themselves to every man's hand. For instance, and only for instance, we may all find out for ourselves, and may try to show to our neighbours, the folly of breathing foul air because it is convenient to congregate in towns, and so of embittering and shortening, by a barbarous blunder, the very lives we go to and fro to make pleasant, and labour so hard to sustain. We may safely and with great confidence in this and some other notable, and now rather notorious, ways take much better care of that wondrous mechanism of life we all possess and have the duty of tending, beside which the mechanism of our best fitted mills is coarse and clumsy, and except to sustain which, in healthy and pleasurable action, our mills and their belongings have literally no use. And to go further afield, we may still go on, as these pages, however dimly, show we have hitherto, more or less discreetly, gone on, each in his place, though, for the most part on but petty ends intent, yet slowly and surely, helping to build up a new and mighty power upon the earth; and from year to year, and from father to son, may learn better how to do our work—and may do this in the assurance, growing ever firmer and better founded as we look more widely and more considerately around us, that we are designedly honoured by our Great Master with shares in a right noble achievement.

But, as yet, it is to be apprehended that the time is not come for our doing more. Our task is of the day. Nor shall we do even that well—as we, who now address you, are very firmly persuaded—if those among us to whom has been given the intellectual guidance of the multitude shall not give due and diligent heed to such lessons, dry and tedious though they be, as abound in the numerical records we now venture again to urge on the attention of the Historic Society of Lancashire and Cheshire.

MEMORANDUM SHOWING IN WHICH REGISTRATION DISTRICTS THE TWO HUNDRED AND FOUR SELECTED COUNTRY DISTRICTS ARE SITUATE.

Ulverston.
- Church-Coniston
- Dalton-in Furness

Lancaster.
- Poulton-le-Sands
- Thurnham

Garstang.
- Garstang

Fylde.
- Lytham
- Poulton-le-Fylde

Clitheroe.
- Twiston
- Downham
- Chatburn
- Pendleton
- Wiswell
- Whalley
- Rimmington

Burnley.
- Padiham
- Higham Booth
- Heyhouses
- Great Marsden
- Little Marsden
- Trawden
- Foulridge
- Barrowford
- Old Laund Booth
- Roughlee Booth
- Goldshaw Booth
- Barley with Whitley-Booth
- Worsthorne
- Simonstone
- New Laund Booth, &c.

Haslingden.
- Higher Booths
- Tottington Higher End
- Musbury
- Old Accrington

Blackburn.
- Clayton-le-Moors
- Church-Kirk
- Oswaldwistle
- Lower Darwen
- Livesey
- Great Harwood
- Witton

Preston.
- Fulwood
- Dilworth
- Ribchester
- Walton-le-Dale
- Much-Hoole
- Farington
- Penwortham
- Longton

Chorley.
- Withnell
- Whittle-le-Woods
- Leyland
- Adlington
- Croston
- Wheelton
- Euxton

Wigan.
- Blackrod
- Haigh
- Aspull
- Pemberton
- Orrell
- Billinge Higher End
- Billinge Chapel End
- Shevington
- Abram
- Standish
- Ashton-in-Mackerfield
- Upholland

Leigh.
- Golborne
- Lowton
- Astley

Bolton.
- Kersley
- Farnworth
- Little Hulton
- West Houghton
- Halliwell
- Breightmet
- Harwood
- Bradshaw
- Turton
- Longworth
- Entwistle
- Edgeworth
- Little Lever
- Darcy Lever
- Quarlton
- Sharples
- Rumworth

Bury.
- Walmersley
- Tottington Lower End
- Birtle-cum-Banford
- Ashworth
- Pilkington
- Ainsworth
- Hopwood

Rochdale.
- Butterworth
- Blatchinworth
- Wuerdale-with-Wardle

Oldham.
- Chadderton
- Tonge
- Royton
- Crompton
- Thornham

Manchester.
- Failsworth
- Moston
- Blackley
- Prestwich
- Little Heaton

Salford.
- Pendlebury

Barton-on-Irwell.
- Clifton
- Worsley
- Flixton
- Urmstone

Chorlton.
- Gorton
- Levenshulme
- Didsbury
- Burnage
- Withington

Ashton-under-Lyne.
- Droylsden
- Denton
- Haughton
- Godley
- Newton
- Mottram
- Tintwistle
- Micklehurst
- Hollingworth

Stockport
- Marple
- Bredbury
- Werneth
- Reddish
- Handforth-cum-Bosden
- Romiley

Macclesfield.
- Bollington
- Whaley-cum-Yeardsley
- Chorley
- Worth
- Eaton
- Poynton

Ormskirk.
- Burscough
- Bickerstaffe
- Maghull

Prescot.
- Little Woolton
- Much Woolton
- Roby
- Huyton
- Widnes
- Rainhill
- Rainford
- Knowsley
- Sutton

West Derby
- Great Crosby
- Litherland
- Allerton

Wirral.
- Hoose
- Wallasey
- West Kirby
- Poulton-cum-Spittle
- Childer-Thornton
- Whitby
- Little Sutton
- Heswall-with-Oldfield
- Great Neston
- Little Neston

Warrington.
- Haydock
- Newton-in-Mackerfield
- Grappenhall

Runcorn.
- Moore
- Halton
- Weston
- Frodsham Lordship
- Helsby

Altrincham
- Sale
- Bowden
- Lymm

Congleton.
- Buglawton
- Biddulph
- Odd Rode
- Wheelock

Northwich.
- Barnton
- Over
- Wharton
- Moulton
- Newton
- Middlewich
- Davenham
- Marston
- Wincham
- Hartford

Nantwich
- Church-Coppenhall
- Barthomley
- Shavington-cum-Gresty
- Burwardsley
- Tarporley
- Tiverton
- Bunbury
- Audlem
- Wybunbury
- Stapeley

Great Boughton
- Upton
- Great Saughall
- Higher Kinnerton
- Hawarden
- Farndon
- Tilston

TABLE VI.

TOWNS. RATES OF INCREASE. ORDER OF PERIOD OF GREATEST INCREASE

		INCREASE PER CENT.				
		1801 to 1811	1511 to 1821	1821 to 1831	1831 to 1841	1841 to 1851
Kirkham	N	42	24	*10	18	*4
Colne	E	47	36	11	6	5
Leigh	E	25	24	13	22	24
Atherton	E	20	6	1	7	4
Horwich	E	52	21	24	6	5
Bolton	E	38	29	32	20	21
Middleton	E	35	31	19	12	13
Ulverston	N	15	28	13	10	25
Clitheroe	N	29	82	62	30	7
Burnley	E	38	52	22	42	43
Accrington	E	6	73	21	39	17
Haslingden	E	27	29	18	4	12
Over Darwen	E	23	52	4	34	25
Blackburn	E	26	45	23	35	27
Tyldesley	E	16	24	16	*6	14
Prescot	W	4	23	13	8	17
Knutsford	S	3	30	3	13	11
Nantwich	S	15	17	5	12	2
Chester	S	7	24	7	7	16
Lancaster	N	2	9	22	13	3
Bury	E	23	19	42	35	23
Heywood	E	20	27	59	42	8
Rochdale	E	24	26	29	23	25
Oldham	E	39	30	49	32	24
Staleybridge	E	49	61	155	54	18
Hyde	E	70	86	113	42	14
Manchester	E	22	39	47	31	30

		INCREASE PER CENT.				
		1801 to 1811	1811 to 1821	1821 to 1831	1831 to 1841	1841 to 1851
Stockport	E	28	26	32	20	6
Macclesfield	E	37	44	47	8	19
Liverpool (North)	W	27	34	52	37	31
Liverpool (South)	W	21	45	176	167	130
Southport	W	19	11	86	51	12
Warrington	S	12	17	23	17	9
Runcorn	S	49	51	62	38	25
Northwich	S	14	19	21	9	15
Congleton	S	20	39	46	*1	14
Sandbach	S	25	26	28	24	2
Fleetwood	N	—	—	—	New.	7
Blackpool	N	23	29	26	109	30
Preston	E	43	43	36	50	37
Chorley	E	15	41	27	42	*3
Radcliffe	E	12	11	26	31	23
Eccles	E	12	15	13	21	17
Ashton-under Lyne	E	22	36	29	38	22
St. Helens	W	26	14	33	49	38
Bacup	E	37	23	7	27	45
Rawtenstall	E	22	39	35	13	42
Wigan	E	27	26	19	23	27
Hindley	E	27	27	22	19	29
Ormskirk	W	20	25	11	15	26
Frodsham	S	8	15	12	3	21
Altrincham	S	20	13	18	26	32
Crewe	S	*6	28	1	37	2152

* Decrease per cent.

TABLE VII.

COUNTRY DISTRICTS EXHIBITING CONTINUOUS INCREASE.

	Increase per cent. 1801 to 1811	1811 to 1821	1821 to 1831	1831 to 1841	1841 to 1851
Greatest Increase 1801 *to* 1811.					
Padiham	21	20	15	7	19
Walton-le-Dale	25	20	—	15	3
Croston	32	13	2	4	3
Leyland	27	20	7	5	1
Withnell	37	9	9	36	16
Pemberton	27	25	16	3	20
Aspull	32	15	30	13	18
West Houghton	25	11	7	1	—
Allerton	45	27	14	18	9
Pilkington	27	22	23	2	15
Birtle cum Bamford	40	14	37	6	6
Halliwell	32	25	30	9	22
Sharples	57	50	25	11	36
Bradshaw	53	23	8	7	3
Tottington Lower End	37	24	27	7	8
Royton	44	26	15	1	22
Thornham	63	25	6	—	4
Tonge	58	23	29	35	58
Pendlebury	58	51	49	41	25
Biddulph	24	14	19	16	16
Halton	42	19	24	6	12
Over	104	20	21	8	12
Moulton	82	5	24	31	3
Marston	23	16	15	3	17
Tiverton	31	20	5	11	9
Wybunbury	26	22	4	19	—
Greatest Increase, 1811 *to* 1821.					
Great Marsden / Little Marsden	24	37	4 / 31	1 / 16	4 / 26
Clayton-le-Moors	26	38	11	20	27
Old Accrington	6	42	5	37	25
Church Kirk	47	59	30	58	32
Oswaldwistle	30	41	19	13	15
Lower Darwen	10	24	19	15	14
Standish-with-Langtree	15	17	17	7	4
Golborne	15	18	17	8	15
Billinge Higher End	16	21	1	5	26
" Chapel End		31	28	21	15
Bickerstaffe	12	33	8	21	6
Little Hulton	26	31	21	2	4
Hopwood	14	28	2	9	2
Wuerdale-with-Wardle	30	34	20	2	14
Blackley	1	22	4	6	9
Failsworth	10	17	9	6	14
Hollingworth	20	28	26	14	17
Clifton	11	29	9	7	21
Didsbury	19	26	14	17	16
Handforth-cum-Bosden	27	33	13	21	12
Worth	35	60	21	34	35
Moore	19	31	23	6	6
Stapeley	5	26	8	26	3
Hawarden	9	14	7	12	1
Little Sutton	32	50	18	10	1

	Increase per cent. 1801 to 1811	1811 to 1821	1821 to 1831	1831 to 1841	1841 to 1851
Greatest Increase, 1821 *to* 1831.					
Poulton-le-Sands	?	31	49	30	42
Sutton	19	10	36	29	29
Roby / Huyton	11	23	29 / 27	11 / 15	10 / 3
Great Crosby	17	35	78	62	23
Maghull	12	20	33	8	2
Kersley	28	32	48	27	23
Rumworth	10	10	37	12	7
Reddish	17	8	50	38	3
Eaton	24	43	61	2	9
Weston	17	56	81	18	49
Helsby	11	27	41	7	5
Wincham	14	17	20	10	5
Burwardsley	23	9	45	16	5
Bunbury	11	16	25	11	1
Tarporley	4	14	24	12	5
Greatest Increase, 1831 *to* 1841.					
Church Coniston	36	23	4	96	12
Lytham	25	12	18	37	30
Farington	30	3	31	156	12
Shevington	12	15	8	25	2
Abram	6	—	1	76	7
Newton in-Mackerfield	9	3	30	46	19
Rainhill	36	17	6	71	31
Much Woolton	37	61	39	69	62
Little "	26	27	9	52	5
Litherland	?	38	57	101	42
Farnworth	25	14	43	65	32
Darcy Lever	34	21	17	52	23
Breightmet	16	13	7	28	18
Turton	30	17	23	40	16
Droylsden	42	30	5	65	27
Marple	11	17	1	29	3
Bollington	23	14	56	62	7
Grappenhall	7	11	10	53	21
Shavington-cum-Gresty	5	38	17	38	3
Upton	5	13	40	51	27
Hoose	67	14	72	127	33
Wallasey	61	1	26	69	27
Greatest Increase, 1841 *to* 1851.					
Dalton-in-Furness	6	18	10	20	42
Fulwood (excl. Mily.)	1	7	16	26	52
Haydock	10	14	2	39	54
Rainford	11	5	19	13	26
Widnes	13	20	38	11	46
Little Lever	24	17	20	16	36
Prestwich	20	25	8	8	29
Tintwistle / Micklehurst	32	17	15	26	74 / 13
Worsley	22	17	9	6	22
Levenshulme	7	14	41	13	55
Poynton	15	9	38	14	46
Odd Rode	9	14	14	17	22
Sale	10	16	5	19	31
Bowden	19	7	6	20	112
Lymm	18	10	10	15	19
Barnton	19	27	19	18	30

TABLE VIII.

COUNTRY DISTRICTS EXHIBITING INCREASE NOT CONTINUOUS.

	INCREASE PER CENT.				
	1801 to 1811	1811 to 1821	1821 to 1831	1831 to 1841	1941 to 1851
Greatest Increase, 1801 *to* 1811.					
Withington	23	*2	17	22	17
Heswall-cum-Oldfield	92	*28	27	34	29
Witton	78	30	*2	2	27
Dilworth	64	13	*10	*3	*1
Longton	48	34	*3	*1	*2
Whittle-le-Woods	28	23	*3	14	1
Astley	12	9	*3	10	11
Ainsworth	15	13	*2	1	11
Flixton	27	16	*13	5	*9
Great Saughall	107	27	*5	31	3
Chatburn	16	15	7	*15	1
Whalley	15	5	9	*12	*6
Barrowford	41	26	21	*—	9
Higher Booths	55	24	37	*16	5
Ribchester	25	20	7	*9	*4
Euxton	44	14	16	*1	4
Ashton-in Mackerfield	28	20	4	*8	5
Burscough	31	18	28	*1	11
Entwistle	28	19	4	*21	*12
Butterworth	24	14	2	*10	14
Burnage	19	13	*1	*4	15
Newton nr. Middlewich	27	27	8	*8	*1
Barthomley	153	*3	*—	*6	7
Poulton-le-Fylde	20	9	1	10	*1
Rimmington	22	17	—	3	*16
Twiston	14	10	*6	*10	*19
Higham &c., Booth	27	20	16	*8	*13
Trawden	35	29	14	2	*10
Much Hoole	24	24	16	5	*1
Wheelton	52	34	23	*12	*22
Blackrod	30	15	6	1	*4
Haigh	40	16	*2	7	*10
Quarlton	24	8	18	*2	*2
Blatchinworth	51	27	34	6	*13
Little Heaton	27	1	22	5	*1
Mottram	53	34	10	51	*1
Urmstone	12	8	9	9	*5
Romiley	23	16	9	14	*7
Wheelock	74	39	*4	30	*5
Frodsham L.	151	29	5	*—	*1
Hartford	41	16	12	15	*4
Higher Kinnerton	102	6	15	1	*5
Greatest Increase, 1811 *to* 1821.					
Livesey	*5	48	7	12	33
Worsthorne	*30	104	26	2	11
Davenham	*3	20	9	18	13
Farndon	*6	27	1	23	7
Childer-Thornton	*14	84	*7	22	*12
Heyhouses	*7	29	* 7	1	*6
Penwortham	18	21	*6	*3	8
Upholland	10	14	*—	2	8
Knowsley	24	29	*1	12	14
Longworth	*9	5	*25	*17	2

	INCREASE PER CENT.				
	1801 to 1811	1811 to 1821	1821 to 1831	1831 to 1841	1841 to 1851
Greatest Increase, 1811 *to* 1821.					
Downham	14	15	*16	*30	*2
Roughlee Booth	16	21	*1	*18	*8
Great Harwood	1	26	16	*7	12
Lowton	17	21	19	*9	*—
Harwood	12	27	11	*1	3
Chadderton	20	24	7	*1	15
Garstang	8	18	*1	*2	*8
Pendleton	2	42	*9	22	*11
Wiswell	40	40	6	7	*4
Barley-with-Wh'tly-Bth	7	35	*8	*3	*21
Goldshaw-Booth	21	31	*7	*2	*17
Old Laund Booth	10	23	22	1	*7
Simonstone	13	18	11	*5	*12
Foulridge	24	27	8	3	*15
Adlington	36	63	4	4	*4
Edgeworth	30	33	25	*22	*28
Crompton	36	37	8	*4	*5
Audlem	8	26	19	4	*2
Tilston	14	26	7	14	*6
Greatest Increase, 1821 *to* 1831.					
Little Neston	*4	30	30	6	17
New Laund Booth, &c.	2	2	11	*12	*9
Orrell	6	5	20	*2	11
Buglawton	13	62	120	*11	10
Middlewich	4	*2	9	*6	*1
Tottington Higher End.	25	11	49	34	*14
Mushury	27	24	69	13	*11
Denton	17	26	39	23	*9
Haughton	34	37	40	14	*8
Werneth	13	38	92	13	*7
Newton near Hyde	44	49	178	25	*—
Great Neston	*10	6	16	4	*10
Greatest Increase, 1831 *to* 1841.					
West Kirby	*5	22	35	42	32
Poulton-cum-Spittle	*5	22	19	74	41
Whitby	*56	233	*6	259	8
Wharton	18	*4	24	32	27
Whaley.cum-Yeardsley	28	47	*4	65	5
Walmersley	21	26	5	41	*2
Ashworth	*12	7	5	11	*15
Bredbury	26	18	18	39	*9
Godley	67	14	24	120	*3
Church:Coppenhall	10	38	*4	55	*9
Thurnham	11	11	17	37	*3
Greatest Increase, 1841 *to* 1851.					
Moston	*1	*3	4	9	35
Chorley	9	12	*1	18	43
Gorton	5	36	64	*8	85

* Decrease per cent.

TABLE IX.

COUNTRY DISTRICTS EXHIBITING DECREASE.

	INCREASE PER CENT.				
	1801 to 1811	1811 to 1821	1821 to 1831	1831 to 1841	1841 to 1851
***Greatest Decrease*, 1801 *to* 1811.**					
Livesey	*5	48	7	12	33
Worsthorne	*50	104	26	2	11
Davenham	*3	20	9	18	13
Farndon	*6	27	*1	23	7
West Kirby	*5	22	35	42	32
Poulton-cum-Spittle	*5	22	19	74	41
Childer-Thornton	*14	84	67	22	*12
Whitby	*56	233	*6	259	8
Little Neston	*4	30	30	6	17
***Greatest Decrease*, 1811 *to* 1821**					
Moston	*1	*3	4	9	35
Withington	23	*2	17	22	17
Wharton or Winsford	18	*4	24	32	27
Heswall-cum-Oldfield	92	*28	27	34	29
***Greatest Decrease*, 1821 *to* 1831.**					
Heyhouses	*7	29	*17	1	*6
Witton	78	30	*2	2	27
Dilworth	64	13	*10	*3	*1
Penwortham	18	21	*6	*3	8
Longton	48	34	*3	*1	*2
Whittle-le-Woods	28	23	*3	14	1
Upholland	10	14	*—	2	8
Knowsley	24	29	*1	12	14
Astley	12	9	*3	10	11
Ainsworth	15	13	*2	1	11
Longworth	*9	5	*25	*17	2
Flixton	27	16	*13	5	*9
Whaley-cum-Yeardsley	28	47	*4	65	5
Chorley	9	12	*1	18	43
Great Saughall	107	27	*5	31	3
***Greatest Decrease*, 1831 *to* 1841.**					
Chatburn	16	15	7	*15	1
Downham	14	15	*16	*30	*2
Whalley	15	5	9	*13	*6
Roughlee-Booth	16	21	*1	*18	*8
New Laund Booth	2	2	11	*12	*9
Barrowford	41	26	21	*—	9
Great Harwood	1	26	16	*7	12
Higher Booths	55	24	37	*16	5
Ribchester	25	20	7	*9	*4
Euxton	44	14	16	*1	4
Orrell	6	5	20	*2	11
Lowton	17	21	19	*9	*—
Ashton-in-Mackerfield	28	20	4	*8	5
Burscough	31	18	28	*1	11
Harwood	12	27	11	*1	3
Entwistle	28	19	4	*21	*12
Butterworth	24	14	2	*10	14
Chadderton	20	24	7	*1	15

	INCREASE PER CENT				
	1801 to 1811	1811 to 1821	1821 to 1831	1831 to 1841	1841 to 1851
***Greatest Decrease*, 1831 *to* 1841.**					
Burnage	19	13	*1	*4	15
Gorton	5	36	64	*8	85
Buglawton	13	62	120	*11	10
Newton	27	27	8	*8	*1
Middlewich	4	*2	9	*6	*1
Barthomley	153	*3	*—	*6	7
***Greatest Decrease*, 1841 *to* 1851.**					
Garstang	8	18	1	*2	*8
Poulton-le-Fylde	20	9	1	10	*1
Rimmington	22	17	—	3	*16
Twiston	14	10	*6	*10	*19
Pendleton	2	42	*9	22	*11
Wiswell	40	40	6	7	*4
Barley-with-Whitley	7	35	*8	*3	*21
Goldshaw Booth	21	31	*7	*2	*17
Higham &c., Booth	27	20	16	*8	*13
Old Laund Booth	10	23	22	1	*7
Simonstone	13	18	11	*5	*12
Foulridge	24	27	8	3	*15
Trawden	35	29	14	2	*10
Tottington Higher End	25	11	49	34	*14
Musbury	27	24	69	13	*11
Much Hoole	24	24	16	5	*1
Wheelton	52	34	28	*12	*22
Adlington	36	63	4	4	*4
Blackrod	30	15	6	1	*4
Haigh	40	16	*2	7	*10
Edgeworth	30	33	25	*22	*28
Quarlton	24	8	18	*2	*2
Walmersley	21	26	5	41	*2
Ashworth	*12	7	5	11	*15
Blatchinworth	51	27	34	6	*13
Crompton	36	37	8	*4	*5
Little Heaton	27	1	22	5	*1
Denton	17	26	39	23	*9
Haughton	34	37	40	14	*8
Bredbury	26	18	18	39	*9
Werneth	13	38	92	13	*7
Godley	67	14	24	120	*3
Newton	44	49	178	25	*—
Mottram	53	34	10	51	*1
Urmstone	12	8	9	9	*5
Romiley	23	16	9	14	*7
Wheelock	74	39	*4	30	*5
Frodsham L.	151	29	5	*—	*1
Hartford	41	16	12	15	*4
Audlem	8	26	19	4	*2
Church-Copenhall	*10	38	*4	55	*9
Tilston	14	26	7	14	*6
Higher Kinnerton	102	6	15	1	*5
Great Neston	10	6	16	4	10
Thurnham	11	11	17	37	3

* Decrease per cent.

TABLE X.

COUNTRY DISTRICTS SHOWING THE HIGHEST RATES OF INCREASE, IN 1801-51.

IN THE ORDER OF THEIR RATES OF INCREASE IN THAT PERIOD.

		INCREASE 1801-51		INCREASE PER CENT.				
		Per Cent.	Per Sq. mile	1801 to 1811	1811 to 1821	1821 to 1831	1831 to 1841	1841 to 1851
Hoose (Wirral)	T.	882	1472	67	14	72	127	33
Much Woolton (near Liverpool)	"	736	2223	37	61	39	69	62
Newton (Ashton-under-Lyme District)	"	644	4775	44	49	178	25	*—
Church Kirk	"	530	1768	47	59	30	58	32
Pendlebury (West of Manchester)	"	529	1591	58	51	49	41	25
Weston	"	476	569	17	56	81	18	49
Great Crosby	Ch.	465	598	17	35	78	62	23
Tonge [near Middleton]	T.	439	5441	58	23	29	35	58
Whitby	"	435	385	*56	233	*6	259	8
Litherland	"	?	?	?	38	57	101	42
Farington	"	406	555	30	3	31	156	12
Godley	"	401	1085	67	14	24	120	*3
Worth	"	371	992	35	60	21	34	35
Sharples	"	347	494	57	50	25	11	36
Farnworth	"	344	2165	25	14	43	65	32
Wallasey	"	336	331	61	1	26	69	27
Droylsden [Ashton-under-Lyne]	"	305	1878	42	30	5	65	27
Gorton	"	297	1500	5	36	64	*8	85
Buglawton	"	297	344	13	62	120	*11	10
Kersley	"	291	2243	28	32	48	27	23
Church Coniston	"	281	84	36	23	4	96	12
Rainhill	"	279	436	36	17	6	71	31
Bollington	"	278	1851	23	14	56	62	7
Over	"	259	320	104	20	21	8	12
Tintwistle	"	257	119	32	17	15	26	74
Micklehurst	Ham.							13
Darcy Lever	T.	255	1780	34	21	17	52	23
Bowden	"	242	637	19	7	6	20	112
Poulton-cum Spittle	"	238	139	5	22	19	74	41
Mottram	"	237	1335	53	34	10	51	*1
Frodsham	Lordship	236	176	151	29	5	*—	*1
Great Saughall	T.	235	185	107	27	*5	31	3
Upton	"	221	221	*5	13	40	51	27
Moulton	"	218	299	82	5	24	31	3
Eaton	"	217	209	24	43	61	2	9
Werneth	"	216	1018	13	38	92	13	*7
Whaley-cum-Yeardsley	"	208	227	28	47	*4	65	5
Heswall with Oldfield	"	205	180	92	*28	27	34	29
Turton	"	204	434	30	17	23	40	16
Levenshulme	"	203	1348	7	14	41	13	55
Widnes	"	201	459	13	20	38	11	46
Sutton	"	198	622	19	10	36	29	29
Witton	"	197	892	78	30	*2	2	27
West Kirby	"	194	418	*5	22	35	42	32
Lytham	P	193	220	25	12	18	37	30
Clayton-le-Moors	Ch.	191	1457	26	38	11	20	27
Wheelock	T.	190	343	74	39	*4	30	*5
Halliwell	"	186	710	32	25	30	9	22
Childer Thornton	"	185	183	*14	81	67	22	*12
Oswaldwistle	"	182	663	30	41	19	13	15
Barnton	"	178	609	19	27	19	18	30
Little Lever	Ch.	175	1402	24	17	20	16	36
Old Accrington	T.	173	1241	6	42	5	37	25
Haydock	"	172	341	10	14	2	39	54
Allerton	"	171	127	45	27	14	18	9
Poulton-le-Sands	Ham.	?	?	?	31	49	30	42
Reddish	T.	167	317	17	8	50	38	3
Haughton	"	167	1078	34	37	40	14	8
Musbury	"	165	419	27	24	69	13	11
Aspull	"	162	690	32	15	30	13	18
Great / Little Marsden	"	161	550	24	37	4 / 34	1 / 16	4 / 26

* Decrease per cent.

TABLE XI.

RATES OF INCREASE IN THOSE COUNTRY DISTRICTS IN WHICH POPULATION WAS MOST DENSE IN 1801.

IN THE ORDER OF THE DENSITIES OF THEIR POPULATIONS AT THAT PERIOD.

		Increase 1801-51, Per Cent. on Populat'n in 1801.	Density Per Sq. mile 1801.	Increase per cent.				
				1801 to 1811	1811 to 1821	1821 to 1831	1831 to 1841	1841 to 1851
Failsworth	T.	69	1577	10	17	9	6	14
Royton	"	156	1287	44	26	15	1	22
Tonge	"	439	1240	58	23	29	35	58
Middlewich Newton	"	28	1187	14	12	9	*7	*1
Garstang	"	15	936	8	13	*1	*2	*8
Blackley	"	48	857	1	22	4	6	9
Little Lever	"	175	801	24	17	20	16	36
Orrell	"	47	782	6	5	20	*2	11
Crompton	"	83	778	36	37	8	*4	*5
Kersley	"	291	769	28	32	48	27	23
Clayton-le-Moors	Ch.	191	761	26	38	11	20	27
Harwood	T.	61	745	12	27	11	*1	3
Chadderton	"	79	742	20	24	7	*1	15
Newton [near Hyde]	"	644	741	44	49	178	25	*—
Great Neston	"	3	730	*10	6	16	4	*10
Old Accrington	"	173	719	6	42	5	37	25
Padiham	"	113	707	21	20	15	7	19
Darcy Lever	"	255	698	34	21	17	52	23
Pilkington	"	122	689	27	22	23	2	15
Bollington	"	278	665	23	14	56	62	7
Levenshulme	"	203	664	7	14	41	13	56
Little Hulton	"	113	652	26	31	21	2	4
Haughton	"	167	645	34	37	40	14	*8
Farnworth	"	344	635	25	14	43	65	32
Clifton	"	103	634	11	29	9	7	21
Whittle-le-Woods	"	74	625	28	23	*3	14	1
Little Heaton	"	62	621	27	1	22	5	*1
Droylsden	"	305	617	42	30	5	65	27
Ainsworth	"	44	612	15	13	*2	1	11
Prestwich	"	126	608	20	25	8	8	29

* Decrease per cent.

TABLE XII.

RATES OF INCREASE IN THOSE COUNTRY DISTRICTS IN WHICH POPULATION WAS MOST DENSE IN 1851.

IN THE ORDER OF THE DENSITIES OF THEIR POPULATIONS AT THAT PERIOD.

		Increase 1801-51 Per Cent.	Density 1851.	INCREASE PER CENT.				
				1801 to 1811	1811 to 1821	1821 to 1831	1831 to 1841	1841 to 1851
Tonge	T.	439	6681	58	23	29	35	58
Newton [near Hyde]	"	644	5516	44	49	178	25	*—
Royton	"	156	3301	44	26	15	1	22
Kersley	"	291	3012	28	32	48	27	23
Farnworth	"	344	2820	25	14	43	65	32
Failsworth	"	69	2666	10	17	9	6	14
Much Woolton	"	736	2525	37	61	39	69	62
Bollington	"	278	2516	23	14	56	62	7
Droylsden	"	305	2495	42	30	5	65	27
Darcy Lever	"	255	2478	34	21	17	52	23
Clayton-le-Moors	Ch.	191	2218	26	38	11	20	27
Little Lever	"	175	2203	24	17	20	16	36
Church-Kirk	T.	530	2101	47	59	30	58	32
Levenshulme	"	203	2012	7	14	41	13	55
Gorton	"	297	2005	5	36	64	*8	85
Old Accrington	"	173	1960	6	42	5	37	25
Mottram	"	237	1897	53	34	10	51	*1
Pendlebury	"	529	1892	58	51	49	41	25
Haughton	"	167	1723	34	37	40	14	*8
Hoose	"	882	1639	67	14	72	127	33
Pilkington	"	122	1531	27	22	23	2	15
Newton and Middlewich	Tps.	28	1522	14	12	9	*7	*1
Padiham	T.	113	1505	21	20	15	7	19
Werneth	"	216	1491	13	38	92	13	*7
Crompton	"	83	1425	36	37	8	*4	*5
Little Hulton	"	113	1366	26	31	21	2	4
Prestwich	"	126	1375	20	25	8	8	29
Tottington Lower End	"	148	1358	37	24	27	7	8
Godley	"	401	1355	67	14	94	120	*3
Witton	"	197	1346	78	30	*2	2	27

* Decrease per cent.

TABLE XIII.

COUNTRY DISTRICTS SHOWING THE HIGHEST RATES OF INCREASE PER SQUARE MILE IN 1801-51.

IN THE ORDER OF THE AMOUNT OF INCREASE IN THEIR DENSITIES OF POPULATION.

		INCREASE 1801-51		INCREASE PER CENT.				
		Per Cent.	Per Sq. mile	1801 to 1811	1811 to 1821	1821 to 1831	1831 to 1841	1841 to 1851
Tonge [near Middleton]	T.	439	5441	58	23	29	35	58
Newton [near Hyde]	"	644	4775	44	49	178	25	*—
Keraley	"	291	2943	28	39	48	27	23
Much Woolton	"	736	2223	37	61	39	69	62
Farnworth	"	344	2185	25	14	43	65	38
Royton	"	156	2014	44	26	15	1	22
Droylsden	"	305	1878	42	30	5	65	27
Bollington	"	278	1851	23	14	56	62	7
Darcy Lever	"	255	1780	34	21	17	52	23
Church-Kirk	"	530	1768	47	59	30	58	32
Pendlebury	"	529	1591	58	51	49	41	25
Gorton	"	297	1500	5	36	64	*8	85
Hoose	"	882	1472	67	14	72	127	33
Clayton-le-Moors	Ch.	191	1457	26	38	11	20	27
Little Lever	T.	175	1402	24	17	20	16	36
Levenshulme	T.	203	1348	7	14	41	13	55
Mottram	"	237	1335	53	34	10	51	*1
Old Accrington	"	173	1241	6	42	5	37	25
Failsworth	"	69	1089	10	17	9	6	14
Godley	"	401	1085	67	14	24	120	*3
Haughton	"	167	1078	34	37	40	14	*8
Werneth	"	216	1018	13	38	92	13	*7
Worth	"	371	992	35	60	21	34	35
Witton	"	197	892	78	30	*2	2	27
Pilkington	"	122	842	27	22	23	2	15
Tottington Lower End	"	146	810	37	24	27	7	8
Padiham	"	113	798	21	20	15	7	19
Prestwich	"	126	767	20	25	8	8	29
Little Hulton	"	113	734	26	31	21	2	4
Halliwell	"	186	710	32	25	30	9	22

* Decrease per cent.

OUR MOTHER-TONGUE IN OUR FATHER-LAND.

By David Buxton, M.R.S.L.

(Read 5th November, 1857.)

In introducing a philological paper for the consideration of the Historic Society, I am conscious that some apology is due from me for handling a subject which has been brought before us by such authorities as Latham and Wright, Mr. Howson, Mr. Ramsey, and Dr. Hume; all of whom have enriched our Transactions by valuable contributions in different departments of philology. Following them, I shall but be a gleaner in this field: but my familiarity with the subject of words is habitual, and a matter of necessity; it forms part of my daily occupation; and it is not impossible that, in my simple way, I may succeed, if not in making any striking discoveries, at least in presenting some facts in a new aspect; as the child's eye may chance to light upon a precious stone upon the beach, which the people of a larger growth have passed by and overlooked.

One thing which has always occurred to me as remarkable in connection with this subject, is the effect which the subjugation of a people has upon language. When the Romans conquered Gaul, they planted their language among the people whom they had subdued, though their occupation of Britain has not left above a dozen words in our vocabulary. When, at a later period, the Roman Empire was itself overrun by the barbarians of northern Europe, the effect in this contact of races was just the reverse, for the conquerors received the language of the conquered. The Norman conquest over England had the effect of adding to a language, which could not be extirpated, though the attempt was made. Why then did this attempt fail? From the same cause which has made the progress of the English so slow in the principality of Wales, though its ultimate victory over the speech of the Highlander and the Irishman, is as certain as it has already proved to be in the Western Hemisphere, where the language of the Indian aborigines only survives permanently in some Geographical designations, and in the names of some indigenous vegetables, as tobacco, potato, &c., which have found their way into other parts of the world.

Now I believe that all these various and seemingly diverse results, are to be traced to the simple and consistent action of one harmonious law, which is, that *a written language will always triumph over one which is merely oral.* The Roman tongue was organized and regulated: it had its records and monuments; these were the tests of contemporaneous accuracy and elegance; and they were also standards for posterity; while the languages which the Roman tongue displaced, were oral merely; therefore changeable and fleeting; and it was both natural and inevitable that they should soon give way before that which had the settled forms and rules of a permanent language. The same may be said of the English tongue, to account for its extension under similar circumstances. Where it has not succeeded, has been where it has come into contact with another written language—the Welsh, for instance. The Saxon speech of our forefathers had, in like manner, its ineffaceable transcripts in a living literature; and the Norman, instead of supplanting it, only succeeded in engrafting itself upon it; and that, after the Norman had itself taken a permanent form, by becoming the legal phraseology of the kingdom. Indeed the Normans themselves were but recent settlers: not native to the land from whence they came hither. Yet they came—only a century and a half after the cession of Normandy to Rollo—not with a speech which bewrayed their Gothic origin, but with the language of the land which they had successfully invaded. They had become its masters in every respect but one—*its language* (following the rule just pointed out), *had mastered theirs*—the off-shoot of the Latin tongue winning an easy victory over the rude speech of the wild and roving Northmen.

A theory of Frederick Von Schlegel's compares all the languages of the earth to a pyramid, of three degrees; those lying at the base of the pyramid being the simple and monosyllabic words of the primitive races; the second stage being composed of dissyllabic or complicated words, indicative of an advance in civilization, and of a corresponding growth in language; and those words which form the apex of the pyramid, being polysyllabic, deriving their significance from the combined richness of other tongues, and being appropriate to a high degree of civilization, and of advancement in those arts which require a technology of their own to describe them.* Applying this illustration to the more limited area of our own language

* See *Philosophy of History*, pp. 193, &c.

we find that our oldest and most familiar words—those which we derive from our Saxon forefathers—and which form, by far, the largest portion of our vocabulary—are short words, of a few letters, and often of a single syllable. They describe all familiar things, and all natural emotions. The Normans brought in a dialect of the Latin tongue; and besides the complex words which we derive immediately from that source,we obtain a great many prefixes and terminations which give to many of our words that character of the dissyllabic root which Schlegel places in the middle of his pyramid. Further, the technology of science, which marks by its growth the highest intellectual attainments, is almost exclusively Greek, and it exhibits, most undeniably, the polysyllabic form which is placed at the summit of this pyramid of languages. These successive layers, which form the concrete mass of English words, are strikingly illustrative of our national history. I shall not, however, go into any of the details which belong to this part of the subject, as many of them were very ably brought before us, during our last session, by one of the gentlemen already alluded to.*

It must have occurred to many of us to observe how considerable is the amount of useful and suggestive information to be gleaned from an examination of Geographical terms. Professor Worsaae, the great Danish archæologist, has remarked, that, in Cumberland and Westmoreland, there are more than sixty places whose names end with *by*. Yorkshire, we know, furnishes some similar instances, and our own district contains many others; but in Lincolnshire they exceed two hundred in number. Having noticed the commonness of this termination, we are next struck by its occurrence in particular localities;—on the sea coast, and particularly the Eastern coast. The inference to be drawn from this fact is a very evident one, viz., that this is a term peculiar to some nation, and that, a maritime nation; that its adventurous voyagers visited and settled upon different portions of our coast, but particularly the Eastern coast,—which we may suppose, from that circumstance, to have been the nearest and most convenient for them. And when we have thus, by a steady and progressive induction, arrived at these conclusions, we find that we have ascertained for ourselves, from internal evidence, what history tells us in

* See the Rev. A. Ramsay's paper on "Comparative Philology considered as an aid to History." Transactions, Vol IX., pp. 105–118.

so many words—that Whitby and Grimsby, Formby and Kirby, were Danish settlements: that *by* is a Danish termination: that the Danes were a nation of adventurous seamen: that they *did* make continual descents upon the coast of England, and especially upon the East coast, which was nearest to their own shores. Besides all this, Ethnology will lead you still further, and show you on the North-east bank of the Dee, where the names of Frankby and Thurstaston, Ireby and Pensby, Greasby and West-Kirby tell of the original incoming of the Danes—how the Danish physiognomy is largely prevalent still, in the light hair, and fair complexion, and marked features, of a great portion of the inhabitants.

And let us see also whether the map of England will not reveal to us something of the national character of our earlier conquerors from Imperial Rome, as well as of the later Saxon and Danish invaders. Look at the position of their fortresses. Scarcely one of them is on the sea-coast. All powerful on the land, the legions of the Cæsars never put to sea, except under the sternest necessity; they hugged the coast whenever it was possible; and when they left Gaul for the invasion of England, they leaped ashore at Dover, not because it was the best place, but because it was the nearest. On the sea, and towards the sea, they were almost defenceless—they got out of its way as if it were an enemy too potent for them to grapple with. One of Julius Cæsar's three great disasters was the loss of his transports on the Kentish coast, which only occurred through the ignorance of his people as to the nature of a spring tide. Many of the Roman stations were on arms of the sea, or considerable streams, because there they could have the advantages of water communication, without its dreaded dangers. Chester, on the Dee; Worcester and Gloucester, on the Severn; London, on the Thames; besides their camps on smaller streams,—the Don, the Exe, and the Ribble,—are all, in their several degrees, evidence of the existence of that national peculiarity in which the Romans form so remarkable a contrast to the Anglo-Saxon race, which has taken their place in the sovereignty of the earth. They sent their armies to occupy military posts: their towns were only camps: their walls were military defences: their roads were merely tracks for the march of their invading legions. We go forth to every climate where an Englishman can live (providing it be only in prosperity and in freedom) to colonize and to make homes: and to produce a New England, not merely and actually in name, as across the

Atlantic, but in very deed, along the shores of Australia and New Zealand, and in the more northerly parts of America, whose people are still bound in the same allegiance, and are loyal to the same power as ourselves.

Within the last few years, the discovery of gold in California has worked a complete revolution in that country—in its inhabitants, its polity, its national character, relations, and rank. Before that event, it was a remote and inaccessible region, cut off, as it seemed, from almost all communication with other lands. But the discovery of gold opened out the country to the skill and enterprise of the Anglo-Saxon races on both sides of the Atlantic; then California became an integral part of the great confederation of United States; and if it were not for the names of its cities and streams, San Francisco, for example, among the former, and Sacramento among the latter, little else would remain to tell of the occupation by the Spaniards of a land which Cortes discovered, but whose riches they never through long generations happened, even by accident, to stumble upon.

Take also another case on the same Continent. Florida—so called from its having been sighted on Palm Sunday—*Pascha Florida*—still introduces us by its name, to the wonderful story of the romance and enterprize of the followers of Cortes, of whose prowess and perseverance in the face of fearful and accumulated difficulties, these musical names, from the Romance tongue of the peninsula, will probably remain to tell to the remotest generations. It would be well if all the European names which have superseded the old Indian nomenclature in the western world, were equally graphic and instinct with meaning. Emerson, after remarking upon the local designations of our own land says, that his country is "whitewashed all over by unmeaning names, the cast off clothes of the country from which its emigrants came, or named, at a pinch, from a psalm tune." * And though the Cape Colony has long since passed from the hands of the Dutch, and become a seat of British power, its geographical terms will continue to tell, should all other evidence utterly perish, of the early colonization of the South African territory by industrious and enterprizing settlers from the banks of the Scheldt and the Meuse. Going back, for a moment, to America, there is the noticeable case of Louisiana, which was originally colonized by the French. The first inhabitants were emigrants from France, and their own tongue was the only language spoken. That region has now been

* "*English Traits.*"

annexed to the territory of the United States: the State of Louisiana forms one of the members of that Federal Union: the Americans have mixed with the descendants of the original settlers: and the English language has, to a great extent, displaced the French; but when all other marks of the nationality of the old settlers have died out, you will find their story repeated still in those names of the state and its capital, taken from the Royal Family of France—Louisiana and New Orleans:* and in other names, equally significant, as Dauphine Island, Lafayette, and Baton Rouge. To the Mississippi itself, was given the name of the River Colbert, after the Minister of Louis XIV; but, happily, this name has not been preserved.

An American writer, upon whose authority I give the preceding facts, (Dr. Hart, of Philadelphia), has acutely remarked that "the importance of the Norman Conquest, in its influence upon the language, is not to be estimated by the actual number of words then introduced. Its chief effect was its having *created the tendency to adopt foreign words.* There is naturally, in all nations, a strong aversion to the adoption of foreign terms. The natural and spontaneous disposition, when a new word is wanted, is to make it out of roots or stems already existing in the language, and by modes of combination with which the popular ear is familiar. The terrible shock of the Conquest, and the wholesale use of foreign words to which the people then became accustomed, overcame this national dislike, and opened a wide door for a continued influx of Latin words from a great variety of sources."† Thus the natural prejudice of every people against the admission of foreign words was, in our case, completely overcome; and the agency by which the change was effected was such as to make it a fashionable

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* La Salle descended the Mississippi to the sea; and formally taking possession of the whole new country watered by the Mississippi, from its mouth to its source, for France, he named it "Louisiana," erected a Column and a Cross, with an inscription—"Louis the Great, King of France and Navarre, reigning April 9th, 1682." History of Wisconsin, New France, and Louisiana, Vol. I., Chapter I., by William R. Smith, President of the State Historical Society of Wisconsin.

"Bienville had, in the Midsummer of 1718, selected the site for the Capital of the New Empire, which, in honour of the Regent of France, he named 'New Orleans.'" Ibid. p. 82.

The work from which the above extracts are given, is one of the Donations received during the present session by the Historic Society of Lancashirea nd Cheshire, and is presented by the State Historical Society of Wisconsin.

† On the study of the Anglo-Saxon language, by John S. Hart, LL.D. Barnard's American Journal of Education, Vol. I., 1856, p. 49.

and, in process of time, even a popular one. Whenever the extension of commerce, the development of the arts, or the discoveries of science, have given rise to the necessity for new words, expressive of new wants or new ideas, our custom has been, instead of fabricating them from our native resources for our own use, to go amongst our neighbours and borrow from them. Thus, as one of our own Vice-Presidents* has very admirably shown, our nautical terms are taken from the Scandinavian and the Romance languages, as spoken on the shores of the Baltic and the Mediterranean—our commercial intercourse, during the middle ages, having been carried on chiefly with those countries.

Since the Railway system has been established, we have gained a suitable nomenclature, which, besides being new in its adaptation to its present objects, exhibits a singular classification. Those terms which we may imagine to have been given by engineers and educated men, contain the classical element, as locomotive, junction, signal, terminus, viaduct, excavation, station, telegraph, buffer, &c.; but the words which are most frequently in the mouths of the working staff of the line, are Saxon, as siding, shunt, switches, rails, &c. The nomenclature of other subjects has been derived from nations noted for eminence in connection with such subjects. Thus, many of our terms of etiquette and punctilio are said to be borrowed from the Spanish; it is quite certain that nearly every one of our musical terms is Italian: and all the designations of cookery, dress, and fashion are taken from the French.

Recently the subject of Church building has attracted considerable attention; and, instead of forming one department of architecture, it has been thought of sufficient importance to be followed as an art by itself. The next step to be taken was to find a distinctive name for this special knowledge, and at once we betook ourselves to the Greek, and culled a new word, ecclesiology, which with its adjective—ecclesiological, and noun-personal—ecclesiologist, is now in common use. In the Law, it may naturally be expected, that its technical and descriptive terms will speak of the source of our system of jurisprudence. They do so. Judge, justice, baron, jury, counsel, advocate, plaintiff and defendant, accuser, prosecutor, culprit, convict, indictment, verdict, acquittal, conviction, sentence, condemnation,

* Rev. J. S. Howson on the History of Naval Terms, Parts I. and II. Historic Society's Transactions, Vols. V., p. 176, and VI., p. 136.

with many others more distinctly marked with the stamp of a French currency, shew that ancient Rome gave us the basis of our legal code, as well as one principal element in our language.

In like manner, all the words of common use in analysis and criticism, are classical, many of them being Greek, and this is the case with nearly all the terms employed in science. We have an instance of this in a fact familiar to us all. A word which had once described a matter of scientific discovery, of real utility, but of limited use, comparatively, became—in the case of the old Telegraph, to which I allude—applied to another improved and common form of communication, dissimilar in all its features, but directed to the same end. The things were different, but we have no alteration of name. "*Telegraph*" described the old line of signals from St. George's Pier to Holyhead, and "*Telegraph*" equally describes the wonderful modes of transmission which electricity has brought into common use. But the necessity of having a single word to describe the thing written, has lately asserted itself, and we have had introduced amongst us, amid the din of a fierce controversy, the word *Telegram*. I am not disposed to criticize the word, but to accept it. "The word is well-culled, choice; sweet and apt, I do assure you, Sir." *

None can deny that it obviates an inconvenience, and supplies a want. The system by which the English language has attained to its present copiousness has not been by making every borrowed word follow the grammatical structure of the language from which it has been derived, but *by adapting it to the forms of our own language.*† The purists who condemn "Telegram" should, to be consistent, go much further, and try to establish a principle, instead of carping at an exception. They would, however, speedily find, that the strict application of their rules to the English tongue would be utterly impossible; and even if it were possible, it would be perfectly useless.

We sometimes hear it said against us, that the educated Irish and

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* Shakspeare. *Love's labour lost*, Act V., Sc. I.

† Bishop Lowth, correcting a criticism of Bentley's on Milton, in which a Latin rule is quoted to show that an expression in *Paradise Lost* is wrong, says,—"This comes of forcing the English under the rules of a foreign language with which it has little concern; and this '*ugly and deformed fault*,' to use his own expression, Bentley has endeavoured to impose upon Milton in several places." Lowth's Introduction to English Grammar, p. 185. London, 1787.

Americans speak better English than we do. We are naturally disposed to smile at an assertion which seems to bear absurdity and self-contradiction on the face of it. But if we look closely at the facts, we cannot fail to see that there is a certain sense in which the statement is perfectly true. Let us remember that the original peopling of North America, by the English, went on uninterruptedly, from Elizabeth to the fall of the Stuarts, under leaders such as Sir Walter Raleigh and William Penn; and that this period in our history was also the most brilliant epoch in our literature: that which begins with Shakspeare, and ends with Addison. The settlement of the Englishry in Ulster took place during a portion of the same time; and it is not difficult to see, that if the inhabitants of these regions have been unaffected by the causes which have deteriorated and corrupted the spoken language of this country, their speech, which was derived from sources of such unquestionable excellence, must be purer than our own; for ours, besides being injured by the introduction of foreign phrases and idioms, and deteriorated by ignorance, has been defiled by vulgarisms, cant colloquialisms, and slang phrases, which derive all the little meaning they possess from their connection with personal, local, or temporary circumstances. These are confined to ourselves, and cannot reach either our fellow-subjects in Ulster, or our more distant relatives across the Atlantic; wherefore, it is not, after all, so absurd as it seems, to say that educated Irishmen and Americans sometimes speak better English than the English themselves, seeing that they speak the speech of their fathers, kept pure by the language of literature, while we are subject to deteriorating influences from which they are comparatively free.* On the

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* In the Westminster Review for October, 1834, I find the following curious statement: "In the County of Wexford there are certain districts called the English Baronies, from their having been, in the fifteenth century, peopled by English adventurers. Their descendants continue to the present time to use the language of their ancestors, having intermixed very little with the surrounding Irish; and they converse almost exactly in the words of Chaucer. They are nearly the only persons in the world (excepting some few black-letter gentlemen) who are able, thoroughly and easily, to understand and relish the ancient poet. Camden mentions these settlers, as speaking the ancient English, about the beginning of the seventeenth century."

I give this extract as bearing upon the point under consideration, having opportunely met with it after the preceding observations were written, and, still more recently, with another paper, to which I also beg to refer—"*On the Irish Dialect of the English Language*," by the Rev. Dr. Hume, in the "*Ulster Journal of Archæology*," No. 21, January, 1858, pp. 52, 53.

other hand, they are exposed to disadvantages of their own, which, though not identical with those just alluded to, are not the less to be regarded as blemishes, by such of us as wish to have their mother-tongue spoken, as well as written, with correctness, elegance, and purity.

That is a wish which should be common to us all; and a purpose for which we should all heartily strive. But proud, and justly proud, as we all are of our native country, I very much doubt whether we are as proud of our native tongue as we ought to be. And yet it is surely a noble heritage. In this language it was that Bacon poured forth the loftiest wisdom, and Shakspeare sang his woodland minstrelsy, or spoke out of the "depths" and "tumults of the human soul": this was the means whereby Milton revealed his high imaginings of more than ear hath ever heard, or eye hath seen: and in this mother-tongue of ours it was, that Jeremy Taylor poured out his soul in deep devotion, or with a thrilling eloquence of speech and wondrous power of thought "vindicated the ways of God to man." To every succeeding generation it comes laden with new riches, and ever increasing interest: it is endeared to us all by a thousand tender associations, and early memories: wherefore, while we joyfully take a patriotic pride in our glorious FATHER-LAND, let us learn to value as we ought, our matchless MOTHER-TONGUE.

FURTHER REMARKS ON THE HISTORY OF THE TWO COUNTIES, AND ITS MATERIALS.*

By John Robson, Esq., M.D.

(Read 4th March, 1858.)

In resuming the important subject of the early state of Lancashire and Cheshire, I need hardly remind you that in the first period, that of Roman dominion, the single positive fact which we find in history is, that Devana, now Chester, was the settlement of the twentieth legion. We have also the names of some post stations, and this is all. Who or what the people were—how they were conquered—how they were governed—everything belonging to our ancestors as working and intelligent men—even the recovery of their independence, is to be sought for in the general history of the country; and if we wish to gain a more particular knowledge of our neighbourhood, we have to learn it from those vestiges of art and industry which time has left us, and which cultivation is fast sweeping away.

Before proceeding to the more especial subject of this evening's paper, I would draw your attention to an event detailed by Tacitus, in his life of Agricola, which I am not aware has been hitherto localized, if you will allow me the expression, but which I think could only have taken place at Chester, and is so far important as bearing upon a very early Roman settlement in the neighbourhood.

The Roman general, Ostorius, in the year 50, advanced against a tribe called, by Tacitus, the Cangi, whose territory extended to the Irish sea,† but he was called back by some disturbances amongst the Brigantes. One of his successors, Suetonius Paullinus, in 61, reached the Menai Straits, when the insurrection of Boadicea broke out; and amongst the troops with which he marched from North Wales towards London,

* See vol. vii., p. 99.

† Ptolemy names the promontory of the Cangani, which is generally considered to be the Great Ormshead; and we have also pigs of lead from the same neighbourhood, with the name Ceangis, A.D. 60.

Tacitus tells us, were the *Vexillarii* of the twentieth legion, evidently showing that the legion itself was left behind. In the time of Ptolemy, it was fixed at Chester; but there can be little doubt that Chester was already a Roman settlement; and that Paullinus, leaving the main body there, and so disposed as to keep up his communications, took with him that portion called the Vexillarii, who having been a certain period in the service, were favoured troops, still attached to the Vexillum or standard, but called into the field only under especial circumstances.

Twenty-two years after this, A.D. 83, Vespasian had become Emperor, and Agricola, the governor of Britain, was engaged in the Highlands of Scotland. During the summer, a cohort of Usipians, who had been enrolled in Germany, were sent over into Britain for the purpose of being trained and attached as auxiliaries to one of the legions. A few Roman soldiers were placed in each company to act as models and teachers, and the whole was under the command of a centurion. These men, probably not liking the drill, killed the soldiers and their commander, seized three galleys, and, before any thing was known, in a wonderful manner got out to sea. One of the pilots made his escape, and fearing that the two others would betray them, they put them to death. The beginning of the voyage was fortunate, but afterwards they were at the mercy of the wind and tides; and when in want of provisions were forced to make attacks on the country people, being generally successful, but sometimes defeated. At length, suffering the extremity of hunger, they devoured the weaker amongst themselves, and then cast lots who should die next. They thus sailed round the island; and having, from ignorance of navigation, lost their vessels, they were taken as pirates, first by the Suevians and then by the Frisians, were sold as slaves, and some finally brought as such for sale on the left or Roman bank of the Rhine, where they related the wonderful adventures they had passed through.

I have shewn the great probability that Chester was already not merely a Roman garrison, but the head quarters of the twentieth legion, so that there would be nothing unlikely in the foreign auxiliaries which were to join it being sent there to go through their training. But if at this period the Romans did not occupy Chester, they would have had no post at all on the western coast; and it is impossible to conceive these men leaving Richborough or Porchester, and sailing round the island to reach Sweden

or Holland. We know, too, that the year before this, Agricola had ships in the Irish channel, though his great fleet was on the eastern coast, from which side it is said to have circumnavigated the island the following year * When the men, however, got out to sea, supposing they sailed from the Dee, they must have been well aware that their best chance of escape was to keep to the north; but their vessels not being provisioned for such a voyage, they were under the necessity of landing and getting supplies as they could, till they were driven to the coasts of Sweden and Holland. We may remark also that amongst the numerous foreign troops that are named as being stationed here, we never meet with any Usipians.

The long period of six centuries and a half intervening between the expulsion of the Romans and the arrival of William of Normandy produced immense changes; and these become the more interesting to us as there is an evident tendency at work in minds, which certainly are altogether ignorant of the historical facts, to bring back some parts of the old organization. It is evident that, without a knowledge of these changes, our history will be, what we find it in Hume; and I shall now proceed with some remarks upon such of the materials as are connected with our own counties.

I have an objection, *in limine*, to the term "Saxon," which has been given to this period. As far as regards our own neighbourhood, I may express a strong opinion that, under no circumstances, did any Saxon tribe ever settle here. This follows, even allowing the legendary account of Beda, who never brings his "Saxones" to the north. Here they were, in their own language, always *English*, while the Saxons, more properly the *Sexe* or *Sexna*, were confined to the south-east and southern coasts of the island. In his time the island was called ENGLALAND, the inhabitants English—speaking among other languages the English, but never the Saxon. The term Anglo-Saxon is more delusive; for, if we find a relic of this period within the limits of the Sexna, it clearly, *prima facie*, belongs to them, as Alfred's Jewel; while anything found out of those limits, and amongst the Teutonic family, as St. Cuthbert's cross, will be as clearly English; but there cannot be any double ownership, and the name Anglo-Saxon can only lead to a confusion of everything in history and archæology.

* Dio Cassius says that Agricola had heard of the exploit of the Usipians, and hence his order to sail round the island, which was the first time the Romans had accomplished it. HIST. ROMAN., Lib. lxvi., c. xx.

The Chronicle commences with the statement, that there were five different nations in the island: English, Welsh, Scottish, Pictish, and Latin; and this appears to have been taken from Beda. Alfred, 870, translates the Historia Ecclesiastica out of Latin into English; but instead of nations, calls them languages, still taking no notice of the Saxon. In one of the homilies, on the martyrdom of St. Alban, the persecution of the christians is described as extending from the continent to Englalande. If we turn to the *Codex Diplomaticus*, we find the kings describing themselves as of the people—"Rex Merciorum," "Cantuariorum," "Westsaxonum," and so on. Athelstan, the grandson of Alfred, is the first who takes the title of "Rex Anglorum." In a Charter of Canute, 1018, he styles himself "Imperator Knuto regiminis Anglici in insula potitus;" and the church at Canterbury is "omnium ecclesiarum regni Angligeni mater;" in the next he signs himself "Ego Cnhut Britanniæ Anglorum monarchus." Edward, in 1045, is styled "Edwardus gratia Dei industrius rex Anglorum omniumque insularum in circuitu persistentium." In an English document belonging to Edward, without date, but as Stigand is named Archbishop, it must have been written towards the close of his reign, we have "Ich Eadward, king of Engletheode."* In No. 853, he makes Ramsey Abbey toll free "over all Engleland;" and at this period we have the shires much as they are at the present day. There are instances, but they are very rare of "Rex Angelsaxonum;" but this combination is intelligible enough when applied to two nations united. We speak of the Anglo-French army or fleet, but not of an Anglo-French ship or sword.†

The existing relics of this period, in a material form, are few, and at present hardly available for historical purposes, as they have never yet been properly examined. Good service would be done by a systematic survey of the line of fortresses in North Cheshire, which are said to have been erected by Edward and his sister Ethelflæda, at the beginning of the tenth century. But these works, extensive as they are, form only a portion of what they are said to have constructed; and I am not aware that any thing has been done to distinguish the work of that period from that of an

* Cod. Dipl., No. 844, 850.

† The title of the Saxon Chronicle is of very recent introduction—it is not named in the MSS., and it was first printed under the title Chronologia Anglo-Saxonica. As it records the events both of the Wessexians and the English, the proper name would be, The Anglo-Sexian Chronicles.

earlier or later time. Our archæologists have paid great attention to Roman and Norman antiquities—to pure English, little or none.

But our written evidences are numerous and valuable. It will be sufficient for me at present to refer to the MONUMENTA HISTORICA BRITANNICA, published by government, and containing most of the original histories of the kingdom to the Conquest. Here we have Beda in the eighth, and the Saxon Chronicle in the ninth, tenth and eleventh centuries, with some other contemporary annalists, but unfortunately leaving much to be wished for. Kings and bishops are put to death or driven into exile, and battles are fought, and men, with a name, die, and so we find it recorded. But why the people rose against the recognised, if they were recognised, authorities; or what led two tribes to battle: or what came after the battle: or what such an ealdorman had done to be named in death, who is not mentioned during his life, is what we look for in vain. Beda's history is strictly ecclesiastical; we find in it the succession of bishops and of abbots and the conversion of kings and their people. But if we take away the miracles and the visions, there is little that gives us an insight into any part of the life of the people; and Beda was so thoroughly a party man, that, as I shall have occasion to shew hereafter, little dependance can be placed upon his statements.

Besides the "Monumenta," government has also published, in another folio, the "Ancient Laws and Institutes" of the kingdom, forming, with the "Chronicle," the most valuable Corpus Historicum possessed by any modern kingdom in its own language. But this is not all; for we have moreover a large number of contemporary charters and private documents from the year 600; at once both the record and example of the progress made by the nation during that period. These valuable documents, if not absolutely unknown to our most popular historians, were hardly available. Many, it is true, had been published in Dugdale's Monasticon, Reyner's Apostolatus, and elsewhere; imperfect copies of the early laws had been printed, but it was not till the labours of Kemble, Stevenson, Thorpe, and other learned men in England and Germany * had placed them fairly before us, that they could be said to be accessible, or that much use could be made of them.

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* I would refer more particularly to Dr. Reinhold Schmid's work, "DIE GESETZE DER ANGELSACHSEN." *Leipsic*, 1858: a work of great interest and importance.

From the tenth century we possess, what is in many respects equally important, a national literature, which, however deficient in itself, becomes invaluable as a photographic reflection of the people. That this should have been preserved at all during the terrible period of the Danish invasions under Cnut; and that property should have been then occasionally involved in most complicated meshes of law, the details of which are minutely given, are matters that may well excite our wonder. Some writers have expressed an opinion that we owe much to the Danish, and still more to the Norman invasion—I fear that all such ravages are an unmitigated evil, and certainly prevent the national progress, if they do not actually send the people back into barbarism.

It is by no means easy to free the mind from all the ideas that belong to the age in which we find ourselves, and it is still more difficult to fill up the centuries that intervene between one historic epoch and another. Few people have any definite notions of the age of "good Queen Bess;" still less of 300 years before that, or how things were managed in the days of King John and Magna Charta; and as to the period before the Conquest, I do not hesitate to say, that it is far more difficult to appreciate than the state of Rome at the time of Cæsar. To realize a state where the land belonged to every freeman, and of course, when there was no private property,—where there was an equality of rank, and no one could assume either power or privilege above his neighbour—this is the first step in English history. To trace the advance of the kingly power, the rise and progress of an aristocracy of the "comites," *companions of the king*, as distinct from the *freemen of the mark*, is the second; and the third is, to understand the process by which the common land of the mark, the *folc-land* as it was called, became gradually transferred to these comites, earls, servants and companions of the king, as *boc-land*, and so lost to the people. The original organization, the Mark system, had in itself, as Kemble tells us, its own elements of decay. Every Mark—and I believe in our neighbourhood, they are still represented by our parishes—was a little republic, owing neither suit nor service nor tribute to any other, nor subject to any special ruler. In the course of 600 years, the folc-land, the property of the commonalty, had become boc-land, the private property of individuals, and was even said to be held of the king in fee as the real owner of the whole. Without a thorough appreciation of these facts, we shall make little progress in our study of English History.

But there were also religious differences at work for most part of the time. First, we have the old heathen population; then the early converts to Christianity—constituting the first British Church—having no immediate connection with, or dependance on Rome, and holding certain peculiar notions about the proper time of celebrating Easter and the right form of shaving the priests' heads; and thirdly came the missionaries from Rome—gradually making their way, and in about 400 years establishing the full supremacy of the papal see. Beda belongs to this class, and important as his Ecclesiastical History is, it is really a very partial and unworthy work. I do not speak of his miracles and visions and legends—they belonged to the time—but no body can doubt that the real point in dispute between the British Clergy and Augustine was the acknowledgment of a foreign supremacy, which Beda carefully ignores. He lays great stress upon the British Clergy refusing to join the Roman Missionary in converting the Saxon, and yet he tells us that it was not till 681—three generations after Augustine's arrival in Kent—that the inhabitants of Sussex were converted by Wilfrid, who had been expelled from the bishopric of York. The King and Queen had been previously baptized, and there was already a small monastery of Scottish monks at Bosham, near Chichester, "who served the Lord in poverty and humility," so that we can hardly give the Roman Missionaries credit for much zeal or sincerity. Be this as it may, these religious differences, and what would appear to be continual attacks upon the opinions and property of the people, would also operate in exciting the minds both of those who were introducing the new order of things, and of those who were opposing it.

I shall now proceed to that portion of the Chronicle which is most interesting to us, as containing an account of events which took place in our own neighbourhood. During the latter half of the ninth century we have little more than the records of battles between the Danes and West Sexna, whose kings then ruled over all the people south of the Thames. From time to time attacks had been made upon the coast, but in 866 it is said a large heathen army came into England (*Angelcynnes lond*), and fixed their winter quarters in East Anglia, where they were soon horsed, and the inhabitants made peace with them. In 868 this army was attacked at Nottingham by the forces of the West Sexna; but the chronicle says there was no great battle, and the Mercians made peace with them. They are described as destroying the monasteries, but there is no contest between

them and the people, and in 871 they reached Reading, in Wessex. This was the year of Alfred's accession, and in seven years afterwards the West Sexna are described as being completely subdued, and Alfred had to take refuge in Athelney. In a few months, however, he was once more making head against them, and in 886 he had not only recovered his own dominions, but we are told that the whole English nation (*Angelcyn*) turned to him, except that part of it which was held captive by the Danes. If we compare these wars with those at the end of the next century and the beginning of the eleventh, we find a marked difference. The Danish chiefs are generals, commanders of the army, but there is no assumption of the kingly power or title. In winter they are quartered in the cities, which were fortified, independent, under municipal government, and as decidedly opposed to the West Sexna as they were friendly to the so-called Danes. It must be remembered that we have only the Wessexian history of the contest, and if we wish for a more complete one we must take the other point of view also; it seems, in fact, to have been a great contest between the *Sexe*, all of whom, south of the Thames, had fallen under the power of Wessex, and the *Engle*, the English. The kings of the West Sexe had been long establishing and consolidating their power, and of course the "Mark" system had been suffering proportionately. Besides this, the clergy had become powerful auxiliaries to the royal cause, and their endowments seem to have been upon a liberal scale. The father of Alfred is said to have given them a tenth part of his possessions or dominions, it is not very clear which. Folc-land was being very rapidly converted into Boc-land, and this increased the power of the king and his comites, by the very means which rendered still weaker the old possessors. The kings of Wessex were making way in Mercia amongst the English, and after a severe struggle, lasting over seventy years, Edward, the son of Alfred, had become master of the country as far north as the Mersey. I believe we shall have a much clearer view of this long contest if we look at it as one between the Sexe under a kingly government, and the English under the Mark system, in which the latter was finally abolished, and the two nations united in one, the king taking the title of the King of the English; previously he had been King of the West Sexna.

The events of the year 894 are given in considerable detail in the Chronicle, much more so than is usual; but as far as possible I must restrict my remarks to what concerns ourselves. We are told that the Northum-

brians and East Anglians had given oaths to Alfred, and the latter, six hostages also; and nevertheless, contrary to their plighted troth, as often as the other armies went out, they also went out, either with them, or on their own part. The king had divided his forces, so that one half was constantly at home, the other half in the field. Alfred first attacks an army which had been harrying Wessex, defeated it at Farnham, and drove it over the Thames. His forces still following it, besieged it as long as their provisions lasted. In the mean time a large fleet had reached Exeter, and Alfred, with the best part of his troops, hastened thither; but the enemy retreated again to their ships. The rest of the forces, with a body of Londoners, took and destroyed a fort at Beamfleet (? Benfleet in Essex), their ships included. Another army of East Anglians, Northumbrians, and Danes, advanced up the Thames, and then along the Severn to Buttington.* Here they were attacked by the king's Ealdormen and Thanes, who had gathered some forces out of Somersetshire, Glocester, and North Wales, and besieged for many weeks. At length they were compelled to fight, and the Christians had the victory; that part which got away thence was saved by flight.

"When they had come into Essex to their fortress and to their ships, "then the survivors again gathered a great army from amongst the East "Angles and the Northumbrians before winter, and committed their wives "and their ships and their wealth to the East Angles, and went at one "stretch, day and night, until they arrived at a western city in Wirral, "which is called Lega-ceaster. Then were the forces unable to come up "with them before they were within the fortress; nevertheless they beset "the fortress about for some two days, and took all the cattle that was there "without, and slew the men whom they were able to overtake without the "fortress, and burned all the corn, and with their horses ate it in all the "neighbourhood: this was about a twelve month after they first came hither "over the sea.

"895.—And then soon after that in this year the army from Wirral went "among the north Welsh, for they were unable to stay there; this was "because they had been deprived both of the cattle and corn which they "had plundered. When they had turned again out of North Wales, with "the booty which they had there taken, then went they over Northhumbria-"land and East Anglia in such wise that the forces could not overtake them "before they came to the eastern parts of the land of Essex, to an island "that is out on the sea, which is called Mersey."

Such is the history of the year 894, as given in the contemporary chro-

* There is a Buttington on the Severn, on the borders of Montgomeryshire.

nicle, and you have the facts connected with the Danish irruption into Cheshire, North Wales, and Lancashire. It was evidently the object of the army to get to Chester before the forces of king Alfred, and it seems they succeeded. This was after the usual summer fighting; the campaign had been unusually busy and unfortunate for the English army, and winter was setting in. They appear to have crossed the Mersey early in spring, and made their way back through Lancashire to their own country.

We have here a most remarkable narrative, especially important to our own neighbourhood, but plain as it seems, it has led to the most contradictory statements. I am not aware of any two interpreters agreeing as to the facts which it professes to describe; and any one who is curious in the matter may refer to the early volumes of the Transactions of the Society, to see some of the interpretations which have been given. It is, however, referred to especially in support of the supposed Danish settlements, which some archæologists have placed in this neighbourhood, and I believe that there is no direct evidence that the Danes ever were here except upon this occasion. It has been said already that we are not to suppose that these Danish armies were entirely composed of natives of Denmark, or that they were foreigners at all. The army here, which is so frequently named, was acting in connection with the Danish fleet, but I believe they were real Englishmen (the Chronicle expressly calls them Northumbrians and East Anglians) contending for their original rights and property, against what they must have considered usurpation and innovations. They had fought in Mercia, and been defeated; the real Danes also had suffered loss both at Beamfleet and Exeter, and as was usual all seem to have gone into winter quarters; at any rate the "here" had retired into East Anglia, when, without any reason assigned, they hurried by forced marches, at a stretch, night and day, across the island to Chester. Now the only way that I see to account for this sudden enterprise is to suppose that when they got home, after the summer campaign, they there learned that Alfred's troops were advancing upon Chester, probably those which had defeated them at Buttington.

That the kingdom of Wessex had been gradually extending itself, and continued to do so for years after this, the Chronicle bears ample testimony. The cities, as I have already stated, were English. The "army" seems to have been always welcome to them, and we have no reason

to think that Chester had different views or interests. We may then understand that the intelligence they got in East Anglia at once despatched them to that city, and it appears that their effort was successful, and that the "fyrd," the forces of Alfred, were shut out. These, however, ravaged the country round about, destroyed the cattle and the corn; and it must be remembered that this was in Mercia, across which the army had just marched, and over which Alfred had assumed a nominal authority. The army, however, was safe within the walls, and the forces, after a couple of days, withdrew, apparently to Wessex. We are then told that for want of provisions the army made an incursion into North Wales, whence part of Alfred's forces had been drawn, and obtaining some booty there returned through Lancashire and Yorkshire, giving no opportunity to the king's forces to attack them. Chester appears to have kept its independence for the time, though it, with other cities, fell under the power of Wessex a few years after. We are told that it was repaired in 907, when, no doubt, it was taken by either Edward (Alfred's successor) or his sister Ethelflæda. In 912, Edward took possession of London and Oxford, and all the lands that belonged to them. The same fate befell Derby in 917,* and in the following year, "in the early part of the year, by God's "help she got into her power, by treaty, the burh at Leicester, and the "greater part of the army, which owed obedience thereto, became subject to "her. And the people of York had also covenanted with her, some having "given a pledge, and some having bound themselves by oath, that they "would be at her command." "Before Martinmas king Edward went with "his forces to Buckingham * * and Thurcytel the earl sought him to be "his lord, and all the 'holds,' and almost all the chief men who owed obe-"dience to Bedford, and also many of those who owed obedience to North-"ampton." I might read you the annals of successive years, containing similar accounts, confirming what I have already stated as to the independence of the cities and marks, and the slow and gradual advance of the kingly power. In the real Danish invasion, which took place at the end of the tenth and beginning of the eleventh century, all was changed; the cities were especial objects of attack and pillage, and one of the most severe battles with the Danes was fought by the East Anglians. There is, in fact, between these two contests all the difference that exists between a domestic war and a foreign invasion.

* "This year, before Lammas, Ethelflæd, lady of the Mercians, God helping her, got possession of the burh which is called Derby, with all that owed obedience thereto."—Sax. Chron.

We find this still further borne out by the peculiar expressions used by the chronicler; you have remarked that the king's forces are called the "fyrd," while the Danish troops are always named "here," the army. In the laws of Ini, which date in the first quarter of the eighth century, and belong to the West Saxons, we are told that a body of men up to seven are *thieves*, from seven to thirty-five they are *hloth*, and above thirty-five they are *here*; and in connection with these nouns are the corresponding verbs to *thieve*, to *hlot*, and to *herry* or *harry*. The second of these words has a curious similarity to one that we have been lately made rather too frequently acquainted with in Indian news—to loot. Each of these crimes requires a peculiar form of compurgation, and are alike under the law. The fyrd was the king's military levy, called out every year for a certain period, each man finding his own arms and provisions.

I must now leave it to yourselves to decide the extent to which the Danish influence could have prevailed in West Derby or any other part of Lancashire or Cheshire. Whatever conclusions you may draw as to the correctness of my interpretation of the march from East Anglia through Mercia to Chester, it is quite clear that no part of the army made any settlement here; and though Alfred's successor extended his actual kingdom to the Mersey, it made no further advances at that time. A series of forts, including Chester, Edisbury, Runcorn, Thelwall, Warburton and Manchester, are all ascribed to Edward and Ethelflæda,* and it is long before Lancashire is named in the original historians of England.

You will excuse my dwelling so long upon this subject, as it is really the most important event that appears in our county history before the Conquest, and I must now bring this paper, which I fear has been very tedious, to a close. All that can support the writer, or encourage his hearers in these minute inquiries, is the certainty that a more accurate knowledge will come from closer investigation, and we are sure that every right-minded man is interested in the history of his birth-place or his home.

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* Ethelflæda built Edisbury, Warburton and Runcorn in 915. Edward constructed the burh at Thelwall, and repaired and garrisoned Manchester in 923.

ANTIQUITIES FROM KERTCH

ON THE SO-CALLED ANGLO-SAXON ANTIQUITIES DISCOVERED NEAR KERTCH, IN THE CRIMEA.

By C. Roach Smith, Esq., (in a letter to Joseph Mayer, Esq.)

(Read 3rd December, 1857.)

The attention of students of our Saxon antiquities was naturally attracted, some months since, to statements, which appeared in most of our leading papers, respecting some of the objects excavated by Dr. Macpherson, and now deposited in the British Museum. It was said that they were Anglo-Saxon; and moreover, in order to account for the apparent paradox involved in their appearance on the banks of the Bosphorus, it was suggested that they probably had belonged to soldiers of the Varangian guard, which, as you know, was drawn from the north of Europe, and from the tenth century served, over a considerable period, as a body-guard to the Byzantine emperors. Before I had seen the objects, I expressed a strong conviction both that the appellation of Anglo-Saxon was misapplied, and that the notion of referring them to the Varangian guard was equally untenable. Having inspected the remains I am confirmed in my opinion.

The fibulæ are the objects which have led to the above decision. They are of two kinds, of the types headed "Germany" and "England," in plate L, vol. ii. of my Collectanea Antiqua; and in plate XVIII, vol. i. of the same work. The former are rarely found in England; the latter abound in Essex, in Norfolk, in Warwickshire, in Northamptonshire, and in other parts; but you will not find, I believe, a single example in your Kentish collections; and only one specimen of the former kind, which is in Mr. Rolfe's gatherings from the Osengal cemetery.* Another example from Kent,† that mentioned above as published by me for comparison with the German, exhausts, so far as I can at present recollect, the number found in this country. This kind of fibula may be termed radiated; the more common, cruciform.

* It is figured in vol. iii. plate VI. fig. 2, of the Collectanea Antiqua.

† See Antiquities of Richborough, Reculver, and Lymne, for the ornaments and urns found with this fibula, and my remarks on them.

Now after what I have said, it will be obvious that there is a similarity between the fibulæ from Kertch and some which are found with Anglo-Saxon Antiquities, and which have been, and yet may be, called Anglo-Saxon. But it by no means follows that those from Kertch have an Anglo-Saxon, or even a Teutonic origin. On the contrary, it seems to me a rational sequence that the very reverse should be nearer the truth; and that while works of ancient art found in the neighbourhood of Byzantium are in no way likely to be derived from the far north, those of the north may be expected to have been strongly influenced by the fashion of the east.

Had it been necessary to account for the presence of Anglo-Saxon antiquities, such as these fibulæ, in the east, we need not look to so late a period as that of the Varangi: we have evidence of Saxon and other German soldiers quartered in the Oriental parts of the Roman empire centuries earlier, from whom, with more probability, they might have been presumed to be derived.

In referring these objects, as I am disposed to do, to a late Roman or Byzantine manufacture, I can only repeat what I have long maintained, namely, that we must study our Saxon antiquities beyond the shores of Great Britain; and fully to comprehend the influence which has guided the peculiar forms and patterns of the ornamented fibulæ, and other personal decorations, we must trace the antiquities themselves in the parent countries; and then we must study contemporaneous remains in Italy and further eastward. At present this has not been attempted: unhappily the very few who have devoted themselves to the study of our National Antiquities are hardly in the position to undertake tedious and expensive journeys, such as would be indispensable; and our Governments have not yet patriotism enough to give encouragement to such researches.

NOTES ON THE CLASSIFICATION OF HUMAN KNOWLEDGE, WITH ESPECIAL REFERENCE TO THE METHODS WHICH HAVE BEEN ADOPTED, OR PROPOSED, FOR THE ARRANGEMENT OR CATALOGUING OF LIBRARIES.

By Edward Edwards, Esq.

(Read 11th March, 1858.)

For the earliest attempts at the Classification of books, of which precise accounts are now attainable, we must look to the yet remaining mediæval Catalogues of Monastic Libraries. Even in those parts of Europe wherein revolutions of Religion have had but a very restricted operation,—as compared, for example, with our own country,—intestine conflicts, popular riots, or foreign wars, have dispersed collections which had been laboriously gathered by the efforts of many successive generations of monks. Such collections, whatever may seem to us their intrinsic worth, must unquestionably have considerable value as elements in the history of Civilization. It is, therefore, matter of reasonable gratulation that although very few Monkish libraries of an early date have descended to modern times, otherwise than piece-meal, we still possess not a few of the catalogues of such collections, taken in their prime. But many of the best of them remain yet unprinted.

Here, however, we are concerned with these Catalogues only as respects the illustrations they afford of the manner in which mediæval men were wont to group together the subjects of human knowledge as embodied in the books that stood on their shelves. In glancing over such old Catalogues, the wish for "more Classics and fewer Schoolmen," will often rise to the lips. But great as will remain the undeniable merits of Monks in respect of the preservation of ancient learning,—after deduction of all drawbacks, —it must always be born in mind, that scholarship was never their primary business. In all ages of the Monastic Institute, Prayer, Penitence, Worship, Consolation, came before Study and Teaching. To a great extent the learning of the cloister grew out of its missionary enterprise.

The monk who was sent forth to convert Pagans to Christianity found that Civilization must go hand-in-hand with Religion. The cultivation and exercise of his own mind, that it might afterwards arouse the slumbering powers of other minds, lay then in the direct path of his daily duty. But it could scarcely be expected that the Christian priest who had to fight with rude Paganism in its open crimes and its visible idol-worship, should have much sympathy with refined Paganism in its deification of the passions, however beautifully arrayed in poetical imagery.

[§ 1. Classification of Monkish Libraries in the Middle Ages.]

The contents, then, of the Monkish libraries were at the outset almost exclusively theological; and, at all periods, Theology was a preponderating element in them. At least in theory, all other subjects of human knowledge were viewed, more or less completely, in subordination to this.

Another preliminary consideration will claim a word or two. Even when the books of a monastic community had become numerous and of varied character, no one monk had much time to make their classification a matter of elaborate study. The *Armarius* or Librarian was usually a pluralist, and none of his offices were sinecures. He was often Precentor. But not only had he to lead the Choir, he had to furnish it with breviaries and service books. The task of superintending the labours of the *Scriptorium* devolved upon him. Sometimes in addition to his musical and literary duties, the poor *Armarius* seems to have been a sort of Master of Ceremonies, and general overseer of the daily conventual life.* So that there must have been ample warrant for that appointment of an '*Armarius Junior*,' or '*Solatium Armarii*, which we occasionally meet with in monastic chronicles.

[§ 2. Classification adopted in the Catalogue of the Library of St. Riquier, A.D., 831.]

In his *Spicilegium*, Father d'Achery has preserved for us a monastic catalogue of the Ninth Century. It forms part of a general return of all the property of the Abbey of St. Riquier, which was made, in the year 831, by order of Lewis *le Debonnaire*. Its arrangement is as follows:—

I. Bibles and Biblical Commentaries.
II. Fathers of the Church.
III. Grammarians (*De Libris Grammaticorum.*)

* *Antiquiores Consuetudines Cluniacensis Monasterii*, printed in D'Achery's *Spicilegium*, iv, 115-188. Comp. Du Cange, sub voce *Armaria*, (*Glossarium mediæ et infimæ Latinitatis*, Henschel's Edit. i, 397); and Martene, *De Antiquis Ecclesiæ ritibus*, iii, 260, seqq.

IV. Historians (*De libris Antiquorum, qui gestis Regum, vel situ Terrarum scripserunt.*)
V. Missals and other Service books.*

In the Royal Library of Munich, the vast extent of which is, in a great degree, owing to the aggregation of ancient libraries from other parts of Bavaria, many of them monastic in their origin, there is a very curious series of the old book-lists of conventual collections, which is said to number nearly 600 separate catalogues, including, as may be well imagined, specimens of almost all known varieties.†

Amongst these is a Catalogue of the Library of the Benedictine Abbey of Weihenstephan, compiled in the 12th Century, which begins thus:—*Hæc est noticia librorum catholicorum Ecclesiæ S. Stephani*, imprimis *qui pertinent ad divinum servitium.* Then follow, *Alii libri a fratribus in capitolio et ad mensam et ad colia. legendi*, all of which are theological or devotional. These are followed by scientific, poetical, and historical books, indiscriminately. Here the only classification is that resulting from the different *uses* to which the books were applied under the monastic regulations.

[§ 3. Catalogue of the Library of St. Emmeram at Ratisbon.]

In the Catalogue of the Library of the Monastery of St. Emmeram, at Ratisbon, the primary arrangement is that of the desks or bookcases in which the volumes were placed. Of these there were thirty-two, thus appropriated:—

I. II.	*Librum textuum Bibliæ.*
III. IV. V. VI.	*Diversi Expositores super Biblia.*
VII. VIII. IX. X. XI. XII. XIII. XIV. XV.	*Doctores (antiquiores) secundum ordinem aphabeti, cum quibusdam Libris suis.*
XVI.	*Libri Historiarum.*
XVII. XVIII. XIX. XX. .	*Libri diversorum doctorum (recentiorum.)*
XXI. XXII. XXIII. . . .	*Libri Juris (Canonici.)*
XXIV.	*Libri diversorum.*
XXV.	*Libri Juris (Civilis and Canonici.)*
XXVI. XXVII. XXVIII. XXIX.	*Libri artium.*
XXX.	*Libri de diversa materia.*
XXXI.	*Libri Omeliarum et Passionalia.*
XXXII.	*Biblia in partibus.*‡

* *Chronici Centulensis, sive S. Richarii*, lib. iii, c. 3, printed in Dacherii *Spicilegium*, iv, 482-486.

† Schmeller. *Ueber Büchercataloge des XV und frühere Jahrhunderte*, (*Serapeum*, ii, 243, seqq.)

‡ Schmeller, *ut supra*, 262.

Another catalogue of the same collection, apparently written about 1460, preserves the same general arrangement, with certain improvements in details. Forty years later comes a new arrangement, introduced by Brother Dionysius Menger, whose catalogue is based, not on the subject matter but on the form and material of the books. He assorts the library into (1) Vellum MSS.; (2) Paper MSS.; (3) Printed Books. These classes are subdivided into the letters of the alphabet, and these again by figures, extending usually to twenty under each letter. Thus of the 420 vellum MSS., the first (*Papias sive mater verborum*, in magno volumine et antiqua bona scriptura,) is marked A. 1; and the last (*Tabula notabilis et magistralis*, in pergameno et affixa bitumine baculo et circumligatur fune canopeo, et dicitur *Tabula Itaf, sive quatuor regiones quatuor elementorum*, habens in fronte imaginem monachi et medici depictam, &c.,) is marked X. 16, and so on with the rest.

[§ 4. Classed Lists of Early Printers.]

Of the Catalogues which contain only Printed Books, the earliest are in some degree Classed Catalogues, and the character of the classification seems to have been determined by that of the stock-in-trade of those Fathers of Printing who issued them. Thus, in 1498, the elder Aldus published a Catalogue of "Libri Græci impressi," under the classes—

1. Grammatica.
2. Poetica.
3. Logica.
4. Philosophia.
5. Sacra Scriptura.

About half a century later (1546) we have catalogues of Robert Estienne, in which the following divisions appear:—

1. Hebræa.
2. Græca.
3. Sacra.
4. Prophana.
5. Grammatica.
6. Poetica.
7. Historica.
8. Rhetorica.
9. Oratoria.
10. Dialectica.
11. Philosophica
12. Arithmetica.
13. Geometrica.
14. Medica.

[§ 5. Gesner's scheme of Classification.]

In 1548 we arrive at what some writers have termed "the first bibliographical system," published with a view to the *use* rather than to the sale of books; it is that of Conrad Gesner, and appeared in the shape of an index of matters to his "*Bibliothèque Universelle*," under the title of "*Pandectarum*,

sive partitionum universalium libri xxi." Cuvier has given a minute account of the work in the excellent notice of Gesner which he inserted in the *Biographie Universelle*, adding that the author (like many other authors) never considered it "as complete as it ought to be," and therefore never permitted the section "Medicine" to be printed. Brunet, too, praises Gesner as a man of good sense, who knew how to keep clear of "those arbitrary combinations of several sciences into a single class, which have captivated so many learned men."* M. Brunet appears, however, to have overlooked that synthetical grouping of the various divisions and subdivisions which Gesner placed at the head of his section entitled "Partitiones theologicæ." If only as the *first* scheme of its kind, this synopsis deserves to be quoted at length. It is as follows:—

- PHILOSOPHIA comprehendit ARTES et SCIENTIAS.
  - Præparantes.
    - Necessaria
      - Sermocinales.
        - 1. Grammatica et Philologica.
        - 2. Dialectica.
        - 3. Rhetorica.
        - 4. Poetica.
      - Mathematicas
        - 5. Arithmetica.
        - 6. Geometria, Optica, &c.
        - 7. Musica.
        - 8. Astronomia.
        - 9. Astrologia.
    - Ornantes .....
      - 10. De divinatione et magia.
      - 11. Geographia.
      - 12. Historia.
      - 13. De diversibus artibus illiteratis, mechanicis, &c.
  - Substantiales .....
    - 14. De naturali philosophia.
    - 15. De prima philosophia seu metaphysica et Theologia gentilium.
    - 16. De morali philosophia.
    - 17. De philosophia economica.
    - 18. De re politica id et civili ac militari.
    - 19. De jurisprudentia.
    - [20. De re medica.]
    - 21. De Theologia Christiana.

The system of classification next in order of date is that which was proposed by Florian Trefler, a Bavarian Benedictine, in a work published in 1560, which I know only by M. Albert's citation of it in his "*Recherches sur la classification bibliographique*;" and by Dr. Edmund Zoller's brief epitome, in his tract, entitled "*Die Bibliothekwissenschaft.*" Its arrangement of classes runs thus:—I. Civil Law; II. Canon Law; III. Casuistry; IV. and V. Dictionaries, &c.; VI. and VII. Hagiography, Chronography, and Topography; VIII., IX, and X. Theology; XI. Philosophy; XII.

* *Manuel du libraire*, Introduction, viii (4th edition.) Gesner has dedicated each of his twenty books or chapters to a celebrated printer, and usually appends to the dedication a list of the most important books printed by each of them respectively.

Oratory and Rhetoric; XIII. Epistolography; XIV. Poetry; XV. Philology; XVI. Miscellanies (*promiscue omnes quotquot superioribus non possint inseri*); XVII. German books (*libros Teutonicos*). Trefler's treatise was already numbered amongst books of great rarity almost two hundred years ago. Both Zoller and Albert, (in common with Jöcher and Ziegelbauer) appear never to have seen the book itself, but describe it on the authority of an elaborate notice by Struve in the Jena periodical *Bibliotheca antiqua*, for January, 1706.

[§ 6. C. de Savigny's scheme.]

In 1587 Christofle de Savigny published, under the title of "*Tableau-accomplis de tous les arts libéraux contenans une générale et sommaire partition des dits arts, amassez et reduicts par ordre, &c.*," a scheme which is substantially but a modification of Gesner's. The number of classes is sixteen, which are thus arranged:—1. Grammar; 2. Rhetoric; 3. Dialectics; 4. Arithmetic; 5. Geometry; 6. Optics; 7. Music; 8. Cosmography; 9. Astrology; 10. Geography; 11. Physics; 12. Medicine; 13. Ethics; 14. Jurisprudence; 15. History; 16. Theology. Each class has its divisions and subdivisions worked out with much elaboration; and, in a second edition of the work, published in 1619, two additional classes are introduced, namely, 17. Poetry; and 18. Chronology.

If literary history did not present us with so many instances of the eagerness with which petty attacks are made upon great names, in the hope of nibbling off, as it were, some fragment of that fame which cannot be openly contested, we might feel surprise that any writer should have adduced this scheme of Savigny's as being "certainly an anticipation and probably a *source*" of the famous "Encyclopædical tree" of our illustrious Bacon, to which in truth it bears scarcely any resemblance. Strange as it may seem, however, this has actually been done, and that by the eminent bibliographer Brunet, in the introduction (already quoted) to the "*Manuel du libraire.*"* It would have been much more to the purpose to have pointed out the very obvious similarity which exists between the classification of Savigny and that of Gesner, which had preceded it by forty years.

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* Brunet's words are: "C'est un système figuré de toutes nos connaissances, antérieur de près de vingt ans, remarquons-le bien, à l'Arbre Encyclopédique de Bacon, *dont il a pu être le modèle*," M. Albert quietly overlooks Bacon altogether.

That well-known survey of all human knowledge by which Bacon at the same time recorded the discoveries that had been already effected, and traced the courses which yet remained to be explored by the enterprise of many succeeding ages, was first given to the world in 1605. Human learning he regards as issuing from the three fountains of *Memory*, of *Imagination*, and of *Reason;* HISTORY being the emanation of the first; POESY of the second; PHILOSOPHY of the third; and there can be, he adds, "no other, nor no more; for History and Experience we take for one and the same, as we do Philosophy and Science."

To quote the whole of the "*Partitio universalis doctrinæ humanæ,*" can scarcely be needed for the purpose in view. But a brief recital of its main divisions may be useful. They run thus:—

- CLASS I.—HISTORY:....
  - 1. Natural History.
  - 2. Civil History.....
    - *a.* Ecclesiastical.
    - *b.* Literary.
    - *c.* Civil, proper.
    - *d.* Civil History,
      - Appendices to
        - i. Orations.
        - ii. Letters.
        - iii. Apothegms.
- CLASS II.—PHILOSOPHY:
  - 1. Science of God.
  - 2. Science of Nature: ..
    - *a.* Primary Philosophy.
    - *b.* Physics.
    - *c.* Metaphysics.
    - *d.* Magic.
    - *e.* Natural Philosophy.
  - 3. Science of Man.
- CLASS III.—POETRY: ..
  - 1. Narrative Poetry.
  - 2. Dramatic Poetry.
  - 3. Allegorical Poetry.*

Here we have an intellectual chart which, as Dugald Stewart has said, (in the preface to the preliminary dissertations to the *Encyclopædia Britannica,*) "is, with all its imperfections, the only one of which modern philosophy has yet to boast." This remark is still substantially true. Bacon's scheme is admirable for comprehensiveness, for lucid arrangement, and for a terminology, at once striking and precise, which the memory can easily and firmly grasp. But it is far better adapted to the purposes of the Historian of Learning and of the Sciences than to those of the Librarian. It is fitter for the classification of ideas than for that of books. In his third class the illustrious author seizes the substance, and disregards

* F. Baconi *Partitio universalis doctrinæ humanæ, &c.* (*De Dign. et Aug. Scientiarum,* lib. 2.) Works, by Montagu, viii, 87, *ad finem,* 8vo. 1828.

the form:—"By Poesie, in this place," he says, "we understand nothing else but original history or fables," ("fiction" as we now say, whether in prose or verse.) *As for verse, that is only a style of expression;*" whilst in his first class he makes *Natural History* and *Civil History* to be correlatives, and thus lays down a rule which, (if it could be carried out) would sever the narratives of what has been observed concerning the workings of nature, from those treatises on what we call the laws of nature, which are but deductions from that observation.

[§ 8. D'Alembert's Elaboration of Bacon's Scheme.]

Accordingly in D'Alembert's Elaboration of Bacon's scheme we find the "Natural History of Minerals," to be a section of the fourth division of class I, and "*Mineralogy*" we find to be a section of the sixth division *(Physics)* of class II, and so it is with plants and with animals. But how, in practice, are we to demarcate Mineralogy from the history of minerals, or Botany from the history of plants?

This system of D'Alembert is so entirely an amplification of Lord Bacon's that it will be more fitly noticed here than in the order of its date (1767). The three main classes he retains, but increases the number of divisions and sub-divisions, and alters their arrangement. Briefly it may be thus stated:—

Class I.—History.
1. Sacred History.
2. Ecclesiastical History.
3. Civil History.
4. Natural History, [*including its application in* Arts, Trade, and Manufactures]

Class II.—Philosophy.
1. General Metaphysics or Ontology.
2. Science of God—(i.) Natural Religion; (ii.) Revealed Religion; (iii.) Science of Good and Evil Spirits.
3. Science of Man—(i.) Universal Pneumatology; (ii.) Arts of Thinking—Retaining—Communicating:—*a*. Logic, *b*. Writing, *c*. Printing, &c.—(iii.) Morals:—*a*. Ethics, *b*. Jurisprudence, *c*. Commerce.
4. Science of Nature:—(i.) Mathematics; (ii) Physics.

Class III.—Poetry.
1. Narrative Poetry.
2. Dramatic Poetry.
3. Allegorical Poetry.
4. Music—Painting—Sculpture—Architecture.*

[§ 9. Other modifications of Bacon's Scheme.]

The system of Bacon has also been made the ground-work of other

* D'Alembert, *Discours préliminaire à l' Encyclopédie Méthodique* (*Mélanges*, i, 239, et seqq. 8vo, Amst., 1767.)

schemes by Regnault Warin,* by Laire,† and by Peignot ‡ These, however, I pass by with the remark that many of the alterations they propose will not on close examination establish themselves as improvements, and that in some instances the later writer expunges the additions or substitutes of his immediate predecessor, and reverts, more or less exactly, to the former arrangement. Thus, for instance, Laire added to the three main classes of Bacon, of D'Alembert and of Regnault, these two:—(4) PHYSICAL WANTS, (5) MORAL WANTS. Peignot omits these; adheres to most of the modifications introduced by D'Alembert; suppresses from the section "Physics," all that bears on Natural History, other than that of the human frame (veterinary medicine excepted), and prefixes an introductory section "Bibliography," by way of preface to the three grand divisions of human knowledge, the third of which he designates "IMAGINATION" instead of "POETRY," and in this third class includes not only "FINE ARTS," but MECHANICAL ARTS; so that a treatise on the art of Cotton Spinning finds itself to be allied with *Hamlet* and with the *Iliad*. Himself a librarian and a bibliographer, it need scarcely be added that in the arrangement of most of his details he has far more regard than D'Alembert had to the requirements of a library; but the system fails, and must fail, to adapt itself to the classification of books, be the amount of ingenuity expended upon the effort what it may.

[§ 10. Schemes of John Rhodius and of Claudius Clement.]

In 1631, John Rhodius proposed a scheme for the arrangement of the University library at Padua, the original manuscript of which has found its way to the Town library of Hamburgh, and has been recently communicated to the Leipsic Journal *Serapeum*, by Dr. F. L. Hoffmann, under the title of *Ein bibliothekarisches Gutachten abgegeben im Jahre* 1631. Rhodius was a Dane; had studied at Wittemberg, and in other German Universities; and finally established himself at Padua, where he died in 1659. His system comprises twelve principal classes, thus arranged:—

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* *Tableau de l'entendement humain—Introduction aux études encyclopédiques* (8vo, Paris, 1798.)

† Peignot, *Dictionnaire raisonné de Bibliologie* (8vo, Paris, 1802), ii, 235, (referring to MSS. preserved at Besançon.)

‡ Ibid. ii, 271—280.

I.	Theology.	VII.	Oratory.
II.	Jurisprudence.	VIII.	Rhetoric.
III.	Medicine.	IX.	Logic.
IV.	Philosophy.	X.	Philology.
V.	History.	XI.	Criticism.
VI.	Poetry.	XII.	Grammar.*

In 1635 Claudius Clement published his work entitled, *Musei, sive Bibliothecæ tam privatæ quam publicæ extructio, instructio, cura, usus, libri iv.*, in which he proposes to class books in a method very similar to that so shortly before suggested at Padua. His arrangement stands thus:—

I.	Theology.	VII.	Sacred History.
II.	Law.	VIII.	Profane History.
III.	Philosophy.	IX.	Polygraphy.
IV.	Mathematics.	X.	Oratory and Rhetoric.
V.	Physiology.	XI.	Poetry.
VI.	Medicine.	XII.	Grammar, &c.

But although the author could boast the dignified appellation 'Regius Professor Eruditionis in Collegio Imperiali Madritensi' his work does little honour either to his learning or his power of exposition, and goes far to justify the criticism of his namesake, David Clement, of Göttingen, who says of him that he had "acquired at Madrid the habit of making diffuse orations on subjects which he did not understand." It is with small warrant, indeed, that some writers have spoken of this scheme as the model, to some extent, of that adopted by Gabriel Naudé in his '*Bibliothecæ Joannis Cordesii Catalogus*' published in 1643.

[§ 11. Naudé's scheme.]

Several years earlier, Naudé had published his *Avis pour dresser une bibliothèque*, which has a special interest for Englishmen, inasmuch as it received the honour of translation at the hand of John Evelyn. The author unfortunately is best known by that which is least honourable to his memory. He had the temerity to attempt a justification of the massacre of St. Bartholomew, on the miserable plea that it was like the act of the skilful surgeon who, having opened a vein, bleeds his patient even to fainting, in order to cleanse the system of its peccant humours † But his merits as a truly liberal promoter of learning, and as one who in

* *Serapeum* 1856, (*Intelligenz-Blatt*), 17–21.

† *Considerations politiques sur les Coups d'Etat*, 4to, (published in the same year as the *Bibliotheca Cordesiana*, 1643.)

that capacity was greatly in advance of his generation, are so considerable that even a frenzy of partizanship carried to so sad a pitch may now, perhaps, claim to be pardoned as the error of a man who, having travelled almost over the length and the breadth of Europe, in search of valuable and splendid books, until he had gathered together not alone the largest, but the most superb library of that age, chiefly plumed himself, not upon the beauty, or the rarity, or the costliness of the collection, but on its free accessibility to all men. In his own vigorous words:—"It shall be open to all the world, without excluding a living soul," (not even the poor Huguenot,) "from eight o'clock in the morning until five in the evening: .....From its door shall resound that cry which has never yet been heard in the Republic of Letters: 'Come in, all you who desire to read, come in freely.'"*

The principal classes proposed by Naudé are as follows:—

Theology.	Military Art.
Medicine.	Jurisprudence.
Bibliography.	Council and Canon Law.
Chronology.	Philosophy.
Geography.	Politics.
History.	Literature.

After mentioning some of the far-fetched schemes which super-subtle writers on this subject had previously proposed, he observes that he would hold such complicated and labyrinthine methods in as little esteem as an unintelligible author, and adds, "I think that system best which is easiest, least complex, and most accordant with established usage." It is obvious, therefore, that whilst Naudé did, to some noticeable extent, improve on preceding systems, both as to the precision of his classes, and as to the order of their sequence—an improvement which will be very manifest if, for instance, we compare his arrangement with Clement's—he expressly disclaimed all desire to achieve reputation as a daring innovator. And in this respect, as we shall see in the sequel, his example has been followed by those of his countrymen who have rendered the most truly efficient services to literature in this not very attractive field of labour.

[§ 12. Bouillaud's scheme.]

I come now to what is substantially the ordinary system of modern French bibliographers. The honour of originating it has been claimed,

* *Dialogue entre Mascarat et Saintange*, as quoted by M. le Comte de Laborde in the fourth of his letters *De l'Organisation des bibliothèques dans Paris*, p. 20.

sometimes for the learned Jesuit Jean Garnier, and sometimes for Gabriel Martin, for so long a period the most eminent of the Paris booksellers; but the claim which is best authenticated seems to be that of Ismael Bouillaud, the compiler of the sale-catalogue of the famous library of De Thou.

Owing to the singular circumstance which retarded, without preventing, the dispersion of that noble collection, Bouillaud's catalogue had lain long in MS. before it was sent to press. It was not published until 1679, and then appeared under the editorship of Joseph Quesnel. The learned author makes no display of his erudition or of his ingenuity, by adding new classes, or by coining new and sonorous names for the old ones; but he lays hold of five classes, some of which will be found in all the preceding schemes, and all of them, with others, in that of Naudé, namely:—

I.—Theology;
II.—Jurisprudence;
III.—History;
IV.—Philosophy;
V.—Literature;

and brings all the books with which he had to deal under one or other of these grand divisions. The more important of the details of this classification will be shewn most advantageously, and with most economy of time, when I come to speak of the modifications introduced into it by Martin, and by De Bure.

[§ 13. Garnier's scheme.]

In the year preceding the publication of the *Bibliotheca Thuana*, Garnier gave to the learned world his able and elaborate *Systema Bibliothecæ Collegii Parisiensis Societatis Jesu*. I give the classes and the main divisions only, in the *first* form in which they appeared.

Class I.—Theology:—
1. Holy Scriptures.
2. Biblical Criticism (*Glossatores Critici Tractores Catenæ, &c.*)
3. Interpreters both of the Old and New Testaments.
4. Interpreters of the Old and New Testaments severally.
5. Collections of the Fathers, both Greek and Latin (*Bibliothecæ Patrum.*)
6. Greek Fathers.
7. Latin Fathers.
8. Scholastic Theologians.
9. Polemical or Controversial Theologians.
10. Casuists.
11. Ascetics.
12. Preachers.

Class II.—Philosophy:—
1. Philosophers.
2. Mathematicians.
3. Physicians.

4. Grammarians.
5. Orators.
6. Poets.
7. Philologists.

Literæ humaniores.

Class III.—History:—

1. Geographers.
2. Chronologists.
3. Universal History, both ecclesiastical and political.
4. General History of the Church.
5. History of particular Churches.
6. History of Religious Orders.
7. History of Saints.
8. Greek History.
9. Roman History.
10. Italian History.
11. French History.
12. Spanish History.
13. German History.
14. Belgic History.
15. English History.
16. Northern History (Danish, Swedish, &c.)
17. History of the Countries adjacent (the Turks, Hungary, Poland, Muscovy, &c.)
18. History of the New World; Voyages and Travels.
19. Genealogical History.
20. Literary History.
21. Iconological History (Archæology, Numismatics, &c.)
22. Natural History.
23. Artificial History.
24. Fabulous History.

Class IV.—Jurisprudence:—

1. Councils and Pontifical Letters.
2. Canon and Ritual Law.
3. Roman Civil Law.
4. French Law.
5. Foreign Law (of various countries in their order).
6. Law of Nations.

Father Garnier's scheme embraces, in the whole, 461 sub-divisions, of which 74 belong to Theology; 88 to Philosophy; 227 to History; and 72 to Jurisprudence; and it may fairly be said that in its minutest ramifications it bears the marks of honest and intelligent labour. The arrangement of the classes "History" (at least as to its first twenty sections) and "Jurisprudence" displays, I think, a great improvement on all preceding systems. In common with the latter, that of the class "Philosophy" is clumsy and confused. Grammar, Rhetoric, Poetry, Poetics, and Philology, are all embraced in this class, whilst works of fiction, both in prose and verse, form a section of the class History, under the designation *Historia fabulosa*. The vast field of "Politics," using that term in its widest sense, is inclosed in another section of the same class, and is named *Historia artificialis;* and the author defines it as including (1) what relates to man individually—his food, clothing, housing, death, and burial; (2) what relates to man as existing in families—marriage, servitude, &c.; (3) what relates to societies of men; and so on.* The formidable division "Heter-

* Adding, after considerable amplification on these heads, "ad hoc caput, referuntur, quæ traduntur de prœmiis et pœnis, de militis, de mercimoniis, de artificiis, de agricultura," &c.—*Systema, &c., p.* 86.)

odoxia," (*Hæreticorum et impiorum libri in octo ordines,*) brings up the rear, but may be regarded rather as an appendix to the preceding classes than as itself forming a fifth class.

[§ 14. Leibnitz' scheme.]

About the year 1700 Leibnitz drew up his *Idea bibliothecæ publicæ secundum classes scientiarum ordinandæ,** in which he proposes ten main divisions, viz.:—I. Theology; II. Jurisprudence; III. Medicine; IV. Intellectual Philosophy; V. Mathematics (*Philosophia rerum imaginationis*); VI. Physics (*Philosophia rerum sensibilium*); VII. Philology (*Res linguarum*, but including Poetry); VIII. Civil History; IX. Literary History and Bibliography; X. Collective Works and Miscellanies. In this classification it will be seen the term "Philology" is used in a sense almost co-extensive with that in which bibliographers now commonly employ the word "Literature"; whilst "Medicine" makes almost its last appearance in the character of an independent division of human knowledge.

[§ 15. Marchand's scheme, as developed in the Faultrier Catalogue.]

Nearly at the same period Prosper Marchand was busied in elaborating a new system which, as he hoped, was to be philosophical in its basis, expansive in its scope, and practical in its adaptability to the arrangement of books. But he did not publish this scheme until 1709, when it was developed in his *Catalogus librorum bibliothecæ Joachimi Faultrier*. In this catalogue we have the following classification:—

Class I.—Philosophy or Human Sciences:—
1. Grammar.
2. Logic and Rhetoric.
3. Poetry.
4. Philology.
5. Ethics.
6. Jurisprudence.
7. Politics.
8. Metaphysics.
9. Physics.
10. Natural History.
11. Medicine.
12. Chemistry.
13. Arithmetic.
14. Algebra.
15. Geometry.
16. Astronomy.
17. Astrology.
18. Optics.
19. Music.
20. Statics.
21. Arts.

Class II.—Theology, or Divine Science.

Class III.—History, or the Science of Events.

Appendix.—Polygraphy.

* Published by Feller in *Otium Hanoveranum*, 128-138. (Leipz. 1718, 8vo.) *Comp. Guhrauer, Bibliothecarisches aus Leibnizens Leben und Schriften*, (*Serapeum*, xii, 27-30.)

This plan, however, met with small favour. Its author had previously introduced some slight modifications into that of Bouillaud, and these seem to have kept their place.

In 1709 also appeared the *Dispositio Catalogi Bibliothecæ J. Renati Imperialis* (at Rome), by Giusto Fontanini, (afterwards Archbishop of Ancyra, and author of the *Bibliotheca della Eloquenza Italiana*,) under the five classes—I. Theology; II. Jurisprudence; III. Philosophy (1. *P. rationalis;* 2. *P. naturalis;* 3. *Historia naturalis;* 4. *P. moralis;* 5. *P. politica;* 6. *Medecina;* 7. *Mathesis;* 8. *Astronomia;*) IV. History; V. Polymathy (1. *Philologia;* 2. *Rhetorica;* 3. *Poetica;* 4. *Grammatica.*) This classification is worked out in great detail, the number of divisions or chapters being sixty-two, and that of sections no less than 1828. In the arrangement of the latter the alphabetical order appears to have been adopted wherever it was practicable.*

[§ 16. Girard's scheme.]

Amongst the papers of the Abbé Girard—author of the once celebrated *Synonymes*, and of the *Principes de la Langue Française*—was found the MS. of a new bibliographical system, widely different from all which I have hitherto noticed. Its merits, be they what they may, are buried beneath a barbarous nomenclature which must have gone far to deprive them of all chance of recognition. Human knowledge is by him arranged in six classes, each with precisely six divisions, and each division is subdivided into two sections, neither more nor less.

> "*Class* nods at *class*, each *section* has a brother,
> And half the *system* just reflects the other."

A very brief specimen must suffice.† The six classes are: I. Theology; II. Nomology (Social Science); III. Historiography; IV. Philosophy; V. Philology; VI. Technology. The details of class II. are as follows:

1. Discipline.
   (i.) *Christian;* (ii.) *Nétéronome.*
2. Civil Law.
   (i.) *Politics;* (ii.) *Jurisprudence.*
3. Corporology.
   (i.) *Cenobitical;* (ii.) *Associative.*

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* Romæ, ex off. F. Gonzage: reprinted in Koehler's *Sylloge*, &c., 1728.

† The scheme is given at length in the Encyclopedia of Diderot and D'Alembert, ii. 761-765, (1st edition.)

4. Ethicology.
   (i.) *Treatises on Morals;* (ii.) *Characters.*
5. Thesmology.
   (i.) *Usages;* (ii.) *Modes.*
6. Praxetonomy.
   (i.) *Ætiology* (*Domestic Economy*); (ii.) *Ludicrology* (*Games of Chance, &c.*)

Whimsically absurd as this scheme may appear, it has not been without imitators.

[§ 17. Conyers Middleton's scheme.]

In 1723 Dr. Conyers Middleton submitted to the Senate of the University of Cambridge a scheme for the classification of the University Library, which by various munificent gifts had recently been much enlarged. The following were the principal divisions:

Class I.—Theology:—
1. Holy Bible.
2. Hermeneutics.
3. Greek and Latin Fathers.
4. Scholastic Theology.
5. Moral Theology.
6. Mystical Theology.
7. Hortatory Theology.
8. Polemic Theology.
9. Councils; Canon and Pontifical Law.
10. Sacred and Ecclesiastical History.

Class II.—Profane History:—
1. Works on the Composition and Study of History.
2. Chronology and Universal History.
3. Ancient History.
4. Byzantine History.
5. History of the Western Empire.
6. History of the Saracens and Turks.
7. History of Particular Countries.
8. Historical Miscellanies.
9. Literary History.

Class III.—Civil Law.

Class IV.—Philosophy:—
1. Works of Ancient Philosophers.
2. Works of Modern Philosophers.
3. Treatises on Logic, Ethics, Economics, and Politics.
4. Physics, Metaphysics, Natural Theology, Philosophical Lexicons.

Class V.—Mathematics.

Class VI.—Natural History.

Class VII.—Medicine.

Class VIII.—Polite Literature:—
1. Works of Orators.
2. Works of Poets.
3. Works of Letter-writers.
4. Works of Antiquaries.
5. Works of Philologists.
6. Works of Polygraphers.
7. Works of Grammarians.
8. Miscellanies (*Miscellanea quæ ad certam aliquam classem reduci nequeant*).*

This publication had the result—singular for a prelection on so harmless

* *Bibliothecæ Cantabrigiensis ordinandæ methodus.* (Miscell. Works, iv. 74-82, 8vo. London, 1755.)

a topic—of subjecting its author to a prosecution for libel,* but of other result it seems to have been barren. The present University librarian, Mr. Power, stated in his reply to the inquiries of the recent Commission of Inquiry into the state of Cambridge University, that "the books are not arranged *generally* in classes," and that "there is no classed catalogue of this Library;" and he adds, somewhat too sweepingly, "the formation of such a catalogue would be very laborious and expensive, and *its use is very much superseded by such books as* Brunet's *Manuel du Libraire*,† Watt's *Bibliotheca Britannica*, &c." Even if these books could themselves be fairly placed in the category of "classed catalogues," it is not very easy to perceive in what way they could be used as substitutes for the proper catalogues of an individual library.

[§ 18. Modifications of the Scheme of Bouillaud by Martin and De Bure, resulting in the "Scheme of the Paris booksellers."]

As I have said already, the minor modifications which Marchand introduced into the bibliographical system of Bouillaud were received with more favour than were those cruder innovations which he embodied in the Faultrier catalogue. Gabriel Martin adopted the former in most of the catalogues which he published between the years 1711 and 1760—a series then certainly unprecedented in the annals of bookselling—and De Bure followed in the same track. The result of their successive labours has since been designated "the system of the Paris booksellers," and its main divisions run thus:

Class I.—THEOLOGY:—
1. Holy Scriptures and their Interpretations.
2. Councils and National Synods.
3. Liturgies.
4. Works of the Fathers.
5. Works of the Schoolmen and of Modern Theologians.

Class II.—JURISPRUDENCE:—
1. Canon Law.
2. Civil Law.

Class III.—SCIENCES AND ARTS:—
1. Philosophy.
2. Physics.
3. Natural History.
4. Medicine.
5. Mathematics.
6. Arts.

Class IV.—LITERATURE:—
1. Grammar.
2. Rhetoric.

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* At the time of its appearance, it may be remembered, the vexed question respecting the right of appeal from decisions of the Vice-Chancellor or Senate to the Courts of Law at Westminster was hotly disputed, and a sentence in Middleton's dedication was construed into a contempt of the jurisdiction in question.

† *Report of Cambridge Univ. Commissioners*, 1852. (Evid. p. 57.)

3. Poetry.
4. Philology.
5. Polygraphy.

Class V.—History :—

1. Historical Prolegomena.
2. Geography.
3. Chronology.
4. Ecclesiastical History.
5. Ancient History.
6. Modern History: (i.) Europe, (ii.) Asia, (iii.) Africa, (iv.) America.
7. Historical Paralipomena (*Heraldry and Genealogy.*)
8. Antiquities.
9. Literary History and Bibliography.
10. Biography.
11. Historical Extracts.

This is the system of which Charles Nodier has said, "It is simple, clear, easy. It can include, without strain, all the capricious and innumerable sub-divisions which it has pleased human fancy to introduce into the literary form of books;" and (which appears to me of still more importance) it is embodied in catalogues which have become classics in their kind.

[§ 19. Essential characteristics of the Schemes hitherto enumerated.]

If the members of this Society who have thus far honoured me with their attention in what I fear will prove to be a tedious survey, will now kindly take the pains to cast a retrospective glance at the various schemes which have been particularized, they will perceive, I think, that however diversified in their respective details, all of them may be grouped in one or other of two classes; the first of which aims at the systematic and consecutive arrangement of all human knowledge, in accordance with some theory either of the power and functions of the mind itself, or of the order and sequence in which the phenomena of the material world may be conceived to present themselves to its contemplation; and the second of which, with far humbler pretensions, seeks but to assort after some convenient and manageable fashion the instruments of knowledge for ordinary employment and daily use. The system-maker in the former case aspires to solve some of the problems which have occupied and divided metaphysicians in all ages; in the latter he is content if he be found to have facilitated the buying and selling, the shelving and the finding of books, by all who handle them or seek them, whether their quest be for the Dialogues of Plato, or for the last edition of the favorite Cookery Book.

I am far from contending that it is necessary to apply to catalogues precisely the same rules as to that avoidance of subtle distinctions, and complex sub-divisions, which will be found indispensable in the actual

arrangement of books on their shelves. Whatever plan may be adopted, it is certain that a good catalogue will require a much more minute classification than would be either useful or practicable in the presses of a library. It is also certain that the preferability of one plan over another will greatly depend on the character and contents of the collection which has to be catalogued. If, for example, the library be especially rich in historical works, it may be expedient not only to give a series of divisions and sections under the class "HISTORY" far more numerous than those assigned to any other class, but also to insert in that class many works which in ordinary cases would have a better claim to appear elsewhere. Thus in a collection the main strength of which lies in *British* history, it may be well to catalogue the "*Statutes at Large*," (the merits of which as an historical text-book have been well enforced by Mr. Froude in the *Oxford Essays*,) in that class rather than in the class "Jurisprudence," giving in the latter a mere reference or guide-mark; and to take precisely the same course with many works which are poetical in *form* but historical in *substance*; as, for instance, the *Alliterative Poem on the deposition of King Richard II.*, or the collection of *Political Songs from the reign of John to that of Edward II.*, published by the Camden Society. This plan was adopted by John Michael Francke, in his catalogue of the library of Count Bunau (now incorporated with the Royal Library at Dresden), and it is not the least useful characteristic of that admirable though unfinished work.

During the latter half of the eighteenth century several new bibliographical systems were proposed—that of Leclerc de Montlinos, published in the *Journal Encyclopédique* for September, 1760, and critically dissected by Mercier, in the same Journal three months afterwards, being perhaps the most fantastically symmetrical of them all. But I pass them over without further mention, and hasten to the description of some, more important for our present purpose, which form a portion of the fruits of that intellectual activity to which the revolution of 1789 gave so vigorous an impulse. Of these the most noticeable seem to be the schemes proposed respectively by Ameilhon, by Camus, by Butenschoen, and by Daunou.

[§ 20. Ameilhon's and Camus' schemes.]

The prominent place assigned in preceding systems to Theology was of course offensive to men imbued with the revolutionary principles of the day. M. Ameilhon, therefore, proposed to displace Theology in favour of

Grammar, to retrench from Jurisprudence its section of Canon Law, (inserting the latter as a sort of appendix to Church History,) and to separate the Physical Sciences from the Arts. He makes nine chief classes, and arranges them thus:—I. Grammar; II. Logic; III. Morals; IV. Jurisprudence; V. Metaphysics; VI. Physics; VII. Arts; VIII. Literature; IX. History: and he is especially careful to disclaim all idea of grouping these classes according to any scheme of the faculties of the human mind, or of establishing by their sequence any theory of the growth of human knowledge.* M. Camus, on the other hand, is far more ambitious. Like so many of his predecessors nothing less will content him than to take a man "in a state of nature," and then to class his library in the order in which this man of nature forms his impressions of the universe about him. His attention, says the worthy academician, is first directed to the heavens, and to the stars which embellish them, and then to the earth on which he dwells. And after having made the tour of the universe he comes back upon himself, studies his own mind, takes the measure of his own capacities, and *begins to collect all that has been written on the nature of man*, his education, the formation of languages, and so on. The reader will scarcely need further proof that the elaborate essay of M. Camus (although it has been printed more than once) has done small service to bibliography; but if further proof were desired, it will surely be afforded by the statement that the author gravely proposes to remove the eulogies of dead men from the shelf of Biography (where he admits common sense might be tempted to place them), and to transfer them to that of Oratory, because "eloquence is their chief object."†

M. Butenschoen, who at the beginning of this century was Professor of History and Librarian, at Colmar, on the Upper Rhine, followed much in the same track, but with somewhat greater discretion. Peignot has described his system at great length. Here, however, I can but enumerate his principal classes, which run thus: I. Works introductory to the Sciences, Literature and the Arts; II. Literature and Fine Arts; III. Historical Sciences; IV. Philosophical Sciences; V. Mathematical and

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* *Projet sur quelques changemens à faire aux catalogues des bibliothèques.* (*Mémoire, de l'Institut National, &c.*, ii, 477.)

† *Mémoires de l'Institut*, an IV. pp. 64, seqq. Peignot characterises this paper as "profound and judicious." *Dictionnaire de bibliologie*, ii. 220. Achard has reprinted it in extenso, (*Cours de bibliographie*, i. 252-278.)

Physical Sciences; VI. Economical and Medical Sciences; VII. Arts and Trades; VIII. Positive Sciences (1. Jurisprudence, 2. Theology); IX. Miscellanies, Collections, and Polygraphy; X. Manuscripts, Literary Curiosities, Typographical Memorials.*

[§ 21. Daunou's scheme.]

Of all those innovating schemes which have a connection somewhat more than synchronical with the great French revolution, that which bears the distinguished name of Daunou is unquestionably the best. We have still, indeed, some attempt at symmetry, but it is, to a certain degree, restrained under the grasp of a vigorous and practical mind. Like Camus and Butenschoen he must begin at the beginning; but instead of putting, in imitation of the former, a fallen Adam into an unfenced Eden, he is content to put a well-conducted pupil into a well-endowed college. The student, he says, begins with grammar, goes through a course of literature, accompanied by some lectures on geography and history. A course of philosophy completes the routine of general instruction, and is followed by the special study of medicine, of law, or of theology, according to the profession for which he is intended. M. Daunou's classification, therefore, (after an introductory section devoted to Bibliography,) shapes itself thus: I. Literature (*Grammarians, Orators and Rhetoricians, Poets, Critics, Literary Miscellanies*); II. History (*Geography, Chronology, History proper, Works supplementary to History*); III. Sciences (*Philosophy, Metaphysics, Logic, Morals, Politics, Social Science, Political Economy, Physics, Mathematics, Natural History*); IV. Arts (*Agriculture, Mechanical Arts, Arts of Design, Music*); V. Medicine; VI. Jurisprudence; VII. Theology; VIII. Polygraphy or Encyclopædical Collections. In criticising this scheme, M. Brunet has very justly remarked, that however suitable it might be for mere *educational* collections, consisting in great part of elementary works, the attempt to treat all the other classes of a vast library, as though they formed a ladder by which to get into a pulpit or into a professional chair of law or medicine, would prove to be a failure.

[§ 22. Parent's scheme.]

Another scheme of this date—that of M. Parent—may, perhaps, deserve a word of remark in passing on. It proposes these thirteen chief divisions: 1. Agriculture and Commerce; 2. Languages and Grammar; 3. Mechani-

* Peignot, *Dictionnaire de Bibliologie* ut supra, ii. 213–218.

cal Arts; 4. Liberal Arts; 5. Mathematics; 6. Polite Literature; 7. Cosmography; 8. Natural History; 9. Chemistry, Physics, and Medicine; 10. History of Nations; 11. Legislation; 12. Morals; 13. Periodical Publications. Not the least curious thing connected with this essay is, that it includes a separate scheme for dividing literary history into fourteen great epochs, each of them connected with a predominating name. Its own epoch is sufficiently marked by the last three of these: "12th Epoch: Voltaire sketching on the walls of the Bastille the rough draft of the *Henriade*. 13th Epoch: Voltaire crowned at Paris. 14th Epoch: Bonaparte, the friend of the arts and of learning, consolidating the French Republic, and *giving peace to Europe*.*

[§ 23. Scheme of the Jena Repertorium.]

Turning from France to Germany, we find, in the Encyclopædical index, published in 1793, of the *Jena Repertorium*, a scheme for the classification of books, which is almost without parallel for the number and minuteness of its subdivisions. They amount to no less than 1200, and are grouped into sixteen principal classes, namely: I. Literature, generally; II. Philosophy; III. Theology; IV. Jurisprudence; V. Medicine; VI. Philosophy; VII. Pedagogy; VIII. Politics; IX. Military Art; X. Natural Sciences; XI. Mechanical Arts, Technology, and Commerce; XII. Mathematics; XIII. Geography and History; XIV. Fine Arts; XV. Literary History; XVI. Miscellaneous Works.† The class Philosophy embraces Ethics, Metaphysics, Logic, and their history. That of Fine Arts comprises—in addition to the Arts of Design, including Landscape Gardening—Music, Calligraphy, Oratory, Poetry, and Declamation. There can be little doubt that a system in which sub-division is carried to so great a length, would to most readers prove a labyrinth without a clue.

[§ 24. Schemes of Denis and of Olenin.]

Two years later, Denis, the learned librarian of the Imperial Library at Vienna, published a second edition of his work, once of some celebrity—*Einleitung in die Bücherkunde*, in which he proposes a system of classification based upon the words of Solomon:—*Wisdom hath builded her house: she*

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* *Essai sur la bibliographie et sur les talens du bibliothécaire*, 1801.

† This index is, of course, like the Work to which it relates, in German. Achard has translated its headings or titles at length in his *Cours de bibliographie*, vol. ii., where they occupy fifty-six pages.

hath hewn out her seven pillars. These pillars are Theology, Jurisprudence, Philosophy, Medicine, Mathematics, History, and Philosophy; and he so arranges their several sections as to establish a fantastic sort of connection between his classes or "pillars." In 1808, M. Alexis Olenin, one of the librarians at the Imperial Library at St. Petersburgh, published an *Essai sur un nouvel ordre bibliographique*, in which he says that "having examined and compared the most accredited systems, he is led to begin his own by separating the Sciences from the Arts . . . And to add to these two classes thus severed, a third class under the name of Philology," which latter class is to consist of three main sections:—1. Linguistics; 2. Polygraphy; 3. Criticism. The sub-divisions of all the classes in this scheme are carried out with great minuteness, and amount, in the whole, to upwards of 500.*

[§ 25. Girault's Scheme.]

Almost contemporaneous with the appearance of this system at St. Petersburgh, was the publication of another bibliographical novelty at Paris, also the production of a librarian, M. Girault of Auxonne, but of one who, like so many of his predecessors, was far more intent on displaying his philosophical acumen in dealing with the vexed questions of mataphysics, than on simplifying the storing and the handling of his books. He sets out in the usual strain:—"I have reflected that, first of all, it is natural that we should seek to know the globe on which we dwell, the position we occupy on it, the events that have taken place there, the laws by which it is governed," and so on; and then proposes these six fundamental divisions:—I. Preliminary Instruction; II. Cosmography; III. History; IV. Legislation; V. Natural History; VI. Sciences and Arts. Cosmography has two sections: Geography and Hydrography. Natural History has eight: Astronomy, Physics, Zoology, Botany, Fossils, Chemistry, Curative Art, Industry, which latter section includes Manufactures, Trade, and Commerce. If any further proof be needed how easily a plentiful crop of practical absurdities may be grown out of a super-subtle theory, it will be afforded by the statement that, although we have here a class of "*Sciences and Arts*," we find the Art of *Printing* under "Preliminary Instruction;" the Art of *Swimming* under "Cosmography;" and the Arts of *Divination*, and of *Working in Metals*, under "Natural

* This scheme is printed in full in the Appendix to the *Report of the Select Committee on the British Museum*, of 1836, pp. 463–474.

History." This fine-spun system of M. Girault has long been buried with the worthy author, but I have not disinterred it without a purpose. It will be seen in the sequel, that not a little both of time and ingenuity is still misdirected with similar perversity.

[§ 26. Coleridge's Scheme.]

From the date of Middleton's scheme until the publication, by way of preface to the *Encyclopædia Metropolitana*, of Coleridge's "*Essay on Method*," no classificatory system of importance seems to have made its appearance in this country. Jeremy Bentham, indeed, in 1816, published a characteristic *Essay on nomenclature and classification* in the appendix to his *Chrestomathia*; but I doubt if he would have applied it to the arrangement of books, even had he undertaken to draw up a plan, not of a Code, but of a Catalogue, for the Emperor of China, or the King of Oude. *Idioscopic Ontology, Poioscopic Somatics, Nooscopic Pneumatology*, and *Polioscopic Ethics*, would scarcely have been recommended even by Bentham, as to the running titles of a book-list, or the letterings of a book-case.

Of Coleridge's plan (if his it may be called, after his sharp protest against the revision the Essay underwent in hands editorial*), it may also be said that it was not directly or mainly intended for the classification of books. There is evidence, however, that he had its applicability to that use to some degree in view, and catalogues are extant to which it has been avowedly a model. Its fundamental construction may with reasonable brevity, be thus indicated:—

Class I.—Pure Sciences:—
1. Formal—(i.) Grammar; (ii.) Logic; (iii.) Rhetoric; (iv.) Mathematics; (v.) Metaphysics.
2. Real—(i.) Law; (ii.) Morals; (iii.) Theology.

Class II.—Mixed and Applied Sciences:—
1. Mechanics.
2. Hydrostatics.
3. Pneumatics.
4. Optics.
5. Astronomy.
6. Experimental Philosophy.
7. Fine Arts.
8. Useful Arts
9. Natural History
10. Medicine.

Class III.—History:—
1. National History
2. Biography.
3. Geography, Voyages, and Travels.
4. Chronology.

Class IV.—Literature and Philology.†

* "So bedeviled," he says, "that I am ashamed to own it."

† *Essay on Method* (Ency. Met.), Introd. i. 44, &c.

This scheme has, unquestionably, great merit. 1. Its nomenclature is plain and familiar. 2. Its main divisions are, for the most part, well defined. What is chiefly needed to adapt it to the practical classification of books would involve more of addition than of suppression.

[§ 27. Mr. Hartwell Horne's Modification of the scheme of Bouillaud and Martin, or the Paris Scheme.]

But, on the whole, I cannot but think it inferior, for library purposes, to the scheme embodied in Mr. Hartwell Horne's "*Outlines for the Classification of a Library*," which were submitted to the Trustees of the British Museum, almost at the same period. Mr. Horne's system is based on that of the "Paris booksellers," considerably modified, however, both with a view to the special requirements of the library for which it was proposed, and to the results of the proposer's personal experience—as well in the preparation of part of the Catalogue of the Harleian MSS,—as in the cataloguing of the fine library of Queen's College, Cambridge.

Four out of the five principal classes of the Paris Scheme, Mr. Horne leaves intact, namely:—THEOLOGY, JURISPRUDENCE, LITERATURE, and HISTORY, but he reverses the order of the two last-named classes. The class "SCIENCES AND ARTS" he breaks up into two classes, the first of which he calls PHILOSOPHY, and the second ARTS and TRADES." In the sub-divisions of the others he also introduces several modifications. He takes out the section *History of Religions* from the class "HISTORY," and transfers it to "THEOLOGY," dealing similarly with *Literary History*, which he transfers to "LITERATURE." The scheme, indeed, on several accounts, merits a very full description, but the following mere outline of its principal sub-divisions must here suffice:—

Class I.—THEOLOGY & RELIGION:—
1. Introductory Works.
2. Natural Religion.
3. Revealed Religion:—
   a. Holy Scriptures.
   b. Sacred Philology.
   c. Councils and Ecclesiastical Polity.
   d. Liturgies.
   e. Fathers of the Church, and Collective Works of Theologians.
   f. Scholastic Divinity.
   g. Systematic Divinity.
   h. Moral and Casuistical Divinity.
   k. Polemical Divinity.
   l. Pastoral Divinity.
   m. Hortatory Divinity.
   n. Mystical & Ascetical Divinity.
   o. Miscellaneous Treatises.
4. History of Religions.

Class II.—JURISPRUDENCE:—
1. Public Universal Law.
2. Ancient, Civil and Feudal Law.
3. Canon Law.

4. British Laws.
5. Foreign Laws.

Class III.—PHILOSOPHY:—
1. Introductory Works; Philosophical Dictionaries, and Encyclopædias.
2. Intellectual Philosophy.
3. Moral & Political Philosophy.
4. Natural Philosophy.
5. Mathematical Philosophy.

Class IV.—ARTS AND TRADES:—
1. History of the Arts.
2. Liberal Arts.
3. Economical Arts, Trades, and Manufactures.
4. Gymnastic and Recreative Arts.

Class V.—HISTORY:—
1. Historical Prolegomena.
2. Universal History, Ancient and Modern.
3. Particular History.
   a. Of Ancient Nations.
   b. Of the Middle Ages.
   c. Of Modern Nations.
4. Biographical and Monumental History.
5. Historical Extracts and Miscellanies.

Class VI.—LITERATURE:—
1. Literary History and Bibliography.
2. Polite Literature.
   a. Grammar.
   b. Philology and Criticism.
   c. Rhetoric and Oratory
   d. Poetry.
   e. Literary Miscellanies.

The most exceptionable parts of this scheme seem to me its severance of works on Ecclesiastical History from the class "HISTORY," and its retention of the vast and rapidly extending literature of Politics and Commerce as a mere sub-section of the class "Philosophy." On the former point, Mr. Horne has this remark:—"This subject is most commonly made a part of the class 'History,' but so many tenets and practices, which strictly belong to Divinity, are *recorded in the History of Religions*, that they cannot with propriety be placed under the general class of 'History.'" The argument is a very inconclusive one. It overlooks the close alliance between the eclesiastical history and the civil history of, at least, all modern nations. It appears needlessly to confound the history of the Church with the history of Dogmatic Theology; obvious as is the fact, that between works such as Fuller's *Church* HISTORY *of Britain*, and Wall's HISTORY of *Infant Baptism*, or Heylin's HISTORY *of the Sabbath*, resemblance is but verbal. And finally, if the principle were fairly worked out, it would make sad havoc with the bibliography of the History of Nations. If the bibliographer be justified in transferring the ecclesiastical history of a people into the domain of Theology, why not transfer its military history to the "Art of War," and its parliamentary and municipal history to Political Philosophy? By a process like this the unfortunate class "History" will speedily become a withered mummy or a bare skeleton. In many other respects Mr. Horne's arrangement appears to me highly meritorious.

[§ 28. Later modifications of the "Paris Scheme" by Barbier, Brunet, and others.]

In France itself, the "Paris System," as left by De Bure, had already been considerably modified, especially in that portion of it which was necessarily most subject to change, the class "SCIENCES and ARTS," by the bibliographers, Barbier, Achard, Brunet, and others. The salient points of these various modifications will be sufficiently apparent if we place the several re-arrangements of that one class side by side.

PARIS SYSTEM.—CLASS III.—SCIENCES AND ARTS.			
(1.) BARBIER (1806.)	(2.) ACHARD (1806.)	(3.) BRUNET (1809-12.)	(4.) TABLEAU DES PRODUCTIONS BIBLIOGRAPHIQUES (1828.)
1. Philosophy. 2. Logic & Dialectics. 3. Ethics. 4. Economy. 5. Politics. 6. Political Economy. 7. Metaphysics. 8. Physics. 9. Natural History. 10. Medicine. 11. Surgery. 12. Anatomy. 13. Pharmacy. 14. Chemistry. 15. Alchemy 16. Mathematics. 17. Astronomy. 18. Astrology. 19. Perspective. 20. Hydrography. 21. Hydraulics. 22. Gnomonics. 23. Music. 24. Scientific Miscellanies. 25. Construction of Instruments. 26. Arts.	1. Philosophy. *a.* Collective Works *b.* Morals. *c.* Economics. *d.* Politics. *e.* Metaphysics. *f.* Physics. *g* Natural History. 2. Medicine. 3. Mathematics. 4. Arts.	1. Philosophical Sciences. 2. Physical and Chemical Sciences. 3. Natural Sciences. 4. Medical Sciences. 5. Mathematical Sciences. 6. Occult Philosophy. 7. Fine Arts. 8. Mechanical Arts and Trades. 9. Gymnastic Exercises. 10. Games.	III.—SCIENCES. 1. General Treatises. 2. Mathematical Sciences. 3. Physical Sciences. IV.—PHILOSOPHY. 1. Morals and Metaphysics. 2. Education. 3. Political Economy. 4. Military Art. 5. Fine Arts.

[§ 29. Ampère's Scheme.]

But in the judgment of M. Ampère such modest reforms as these were quite insufficient. For him "the path of ancient ordinance, *since* it winds," is far too devious. No course less straight than that of a cannon ball has any charm for him. In his view, Bacon, and those who have followed Bacon, in treating of the classification of human knowledge, have been too easily content with grouping the sciences "under those titles which usage has capriciously assigned to them." And accordingly he sets to work to form new groups, on a more rational system, and to give to the new groups new names. And, like the worthy Abbé Girard, or our own Bentham, the less the new names smack of the vernacular the more they are to his taste. Perfect symmetry of form also is as essential to M.

Ampère's system of classification as it was to a Greek temple. The class "Sciences," which by many of his predecessors was thought to be already too comprehensive, is by him made, like Aaron's rod, to swallow up all the others. The whole range of knowledge he assorts into two main divisions: 1. COSMOLOGICAL SCIENCES; 2. NOOLOGICAL SCIENCES. Each main division has four sub-divisions, or, as the author would probably himself describe it, is *quadrifurcate*, and, of course, each fork is four-pronged. Thus, for example, the Cosmological Sciences are 1. *Mathematical;* 2. *Physical;* 3. *Natural;* and 4. *Medical;* the mathematical are again divided into four. beginning with "*Arithmology*" and ending with "*Uranology;*" and the Physical into other four, beginning with "*Physics*" and ending with "*Oryctotechny;*" and so on. Strange as the assertion may seem, it *has* been asserted that a few years ago it was seriously proposed in the "*Conservatoire*" of the Imperial (then Royal) Library at Paris, to abandon the established system and to adopt this grand encyclopædical scheme of M. Ampère. Well may it be said, that if this idea had been acted upon, it would have turned that noble library into a bibliographical chaos.* But happily the danger is a danger which is past.

[§ 30. M. Albert's Scheme.]

Of later schemes, both in Germany and in France, as well as elsewhere, there have been many; but at present I notice only two—those of M. Albert and of M. Merlin—both of which are of quite recent date. M. Albert's avowed starting point is this:—A book, he says, is composed of two primary elements, certainly inseparable, but essentially distinct, which may be termed respectively its body and its soul:—The body, the material book; the soul, the author's thoughts, of which the book is the vehicle; and, further, in this soul or spiritual essence of a book itself, he recognizes two secondary elements, which he severally terms the ideal, or intellectual substance *(Fond idéal)*, and the literary form *(Forme littéraire)*. On the former of these he professes to base his classification, wholly regardless of the latter. There is much truth in his assertion, that the external form or mere costume of books, as contrasted with their true subject-matter, has been thrust into very undue prominence, in most of the bibliographical systems. But the distinction is by no means so new as his mode of stating it would suggest, nor shall we think him, I suppose, very felicitous in his selection of the

* Brunet, ubi supra.

methods by which he proposes to work it out. His tract, however, is, in certain respects, a good one, and will repay perusal.

Having established a basis which he regards as very revolutionary, M. Albert is anxiously constitutional in his subsequent proceedings. In settling the order and number of his classes he, of course, "casts his eyes over the world, and over all * that surrounds us," man himself included, and he finds it to be, indeed, "a mighty maze, but not without a plan." All human thoughts and all the books in which human thoughts can be clothed, seem to him to turn on three grand primal ideas: God, Man, the World; and thence he deduces three main classes: "Theology, Andrology, Cosmology;" and then he adds, with an air of marvellous profundity, "Philosophically speaking, Man is the *indispensable medium* between the other two subjects *(l'intermédiare obligé entre les deux autres sujets)*;" † and proceeds to transpose the order of his classes, prefixing to them an introductory class which is to comprise all works that extend over two or more of the principal classes. The following will serve as a brief specimen of the manner in which the scheme is elaborated.

	No. of Sub-divisions.
Class I.—Polylogy	4
„ II.—Cosmology:—	
1. General Treatises on Cosmology	4
2. Mathematical Sciences	35
3. Annexed Sciences, (Chronology, &c.)	16
4. Physical and Chemical Sciences	23
5. Natural Sciences	116
„ III.—Andrology:—	
1. General Treatises on Andrology	...
2. Organic and Medical Sciences	53
3. Economic and Industrial Sciences	47
4. Political and Social Sciences	221
5. Artistic and Literary Sciences	57
6. Philosophical and Moral Sciences	21
„ IV.—Theology:—	
1. Monotheistic Religions:—	
i. General Treatises	
ii. Judaism	6
iii. Christianity	38
iv. Mohamedanism	6

* Albert, ut supra, p. 50.
† Ibid. p. 53.

2. Polytheistic Religions :—	
i. Extinct Religions	
ii. Brahmanism and Buddhism	2
iii. Magism and Sabeism	2
iv. Fetichism	2
3. Natural Theology	4
Total No. of Sub-divisions . .	659

The details (as M. Albert has himself acknowledged) are, to a great degree, borrowed from Brunet.

[§ 31. M. Merlin's scheme.]

Prior to the appearance (1847) of the "*Researches*" of M. Albert, M. Merlin had given some general idea of his system in the preface to his Catalogue of the library of Silvestre de Sacy, but it has been much more fully developed in a letter which he addressed to the "Convention of Librarians," assembled at New York in September, 1853. "In my opinion," he says, "every bibliographical classification should be based upon the logical classification of the sciences . . . It should form . . . a logical chain of great classes and their subdivisions, whose formation and order are the result of a few principles which serve as a base to the system;" and then he adds very inconsistently, I think, "The great object of bibliographical classification is to assist the . . . inquirer in his search after books that he already knows to exist, and impart to him information concerning those with which he is unacquainted." That this result can only be attained by bringing together all the works which treat of the same subject, is unquestionable; but it by no means follows that they must be arranged "in such order that the mind *shall pass naturally from each subject to that which should follow or precede it.*" In truth, this is impracticable, not only from the fact that, the more rigorously logical the learned cataloguer may make his divisions and sub-divisions, the less agreement there will be between the actual contents of the books he catalogues, and the arbitrary headings under which he has placed them, but also because the entire scheme is grounded on what I will venture to describe as a philosophical blunder. What sort of a science of Palæontology should we now possess, had all who cultivated it insisted on working it out under the supremacy of that theory—graceful but unsound—which had so many charms in its early stages; the theory, I mean, that there was

a gradual and uniform progression of organized beings, in time, the lower types regularly preceding the higher? Yet precisely similar is the assumption that underlies M. Merlin's system, which seeks to "classify human knowledge by the objects of which it treats, either directly or indirectly, all arranged in the organic scale of being, . . . *according to the chronological order of creation, that is to say, rising from the most simple to the most perfect.*" * I am far, indeed, from denying that so able a bibliographer as M. Merlin may make a good catalogue even on a bad system. *That* he has long since put beyond doubt. But I deprecate the flood of bad catalogues which would surely result from the imitation of his example by average librarians; and I state my own objections the more frankly, because it does not appear that any were expressed in the highly competent assembly to which the plan was communicated.

Its details were not set forth, nor do they appear as yet to have been fully worked out.† But the main divisions run thus:—

Class I.—POLYGRAPHY.
„ II.—PHILOSOPHY.
„ III.—THEOLOGICAL SCIENCES.
„ IV.—COSMOLOGICAL SCIENCES:
1. Mathematical Sciences.
2. Physical Sciences.
3. Astronomical Sciences.
4. Geological Sciences.
5. Mineralogical Sciences.
6. Phytological Sciences.
7. Zoological Sciences.
8. Anthropological Sciences.
i. Sciences of Man individually.
a. Physical.
b. Moral.
ii. Sciences of Man in Society.
a. Political Sciences.
b. Historical Sciences.

There are many points of resemblance, it will be seen, between M. Merlin's plan and that of M. Albert. But whether this resemblance be fortuitous or not, it is quite certain that the indebtedness is not on M.

* *Literary Register*, (New York), 1854, pp. 81–84.

† "I have," says M. Merlin, "in the press, at the Imperial Printing Office, a work in which, after having reviewed, analyzed, and estimated all that has been done up to the present time, especially in France, I propose a new method," &c. But it does not appear that this work has yet been published.

Merlin's side. The points of contrast are also very noticeable. The last named author does not appear to have made those marvellous intellectual strides which enabled the former to pronounce, "philosophically speaking," that "*Deity is a conception, an intuition of the human brain,*" and the like, but ventures to continue to think that there may possibly be some relation between Deity and Creation of which man is *not* the "indispensable medium." In defining his main classes he writes thus: "Since cause precedes effect, the science which treats of God should precede all other sources, and it would be so in my classification *but* for those principles of analytical exposition, according to which every science which embraces several subjects ought to precede those sciences which treat of every such subject severally. Now "THEOLOGY" has God only for its object, and there is another science which treats both of God and of the creation, that is, "Philosophy." . . Philosophy will then precede Theology, and after Theology will come the Sciences which relate to created things.* Thus it is that he makes the sciences relating to man, not an independent class, but the last division of "Cosmology."

[§ 32. Lord Lindsay's scheme.]

Nearly contemporaneous with the first appearance of the first outlines of M. Merlin's system as applied to the Silvestre de Sacy catalogue, was the publication of a new scheme of classification in England by Lord Lindsay, by way of supplement to his remarkable tract entitled "*Progression by antagonism.*"† Presented primarily, as a scheme for the classification of human *thought* (grounded upon certain views of the moral government of the world with which we have not here to do,) and in an extremely analytical form, its connection with our subject arises from the author's remark that with certain modifications, which he indicates, "this might be made the basis and skeleton of an extended classification for a library." Those who have read Lord Lindsay's charming "*Lives of the Lindsays,*" will readily recognize the claim of any production of his pen to respectful attention. I give, therefore, a brief outline of this scheme, open as it is to many of the objections which have been already urged against other schemes, similarly ambitious in their scope, although widely different in all respects beside.

Lord Lindsay proposes five chief classes (the fifth being added in view of the exigencies of a library,) namely:—I. THEOLOGY AND REVELATION;

* Ibid.
† 8vo, London, 1845.

II. POETRY; III. SCIENCE; IV. PHILOSOPHY; V. BIBLIOGRAPHY and COLLECTIONS. "History," he makes a section of the class "Poetry," because closely akin to Poetry and Painting; because rhythmical in early times, and always epical and dramatic." Thus, POETRY is made to include four principal sub-divisions:—1. *Symbolism*; 2. *Fine Arts*, (Music—Dancing—Architecture—Sculpture—Painting.) 3. *Polite Literature*, (Rhetoric—Poetry proper) 4. *History*; whilst the class SCIENCES is divided, on the one hand, into "Speculative Physical," and "Speculative Metaphysical" Sciences; and, on the other, into "Practical Physical," and "Practical Metaphysical" Sciences.

[§ 33. Mr. Eyre's scheme.]

Still more recently, Mr. Samuel Eyre, of Derby, has circulated "Outlines of a classified scheme for the arrangement of a library," &c., (suggested, he says, by Locke's three-fold division of knowledge in the *Essay on the Human Understanding*, and by some other works.) It comprises twenty-three divisions, which are grouped into four classes: I. METAPHYSICAL, that is, concerning things beyond the bounds of mere human experience; II. PHYSICAL, that is, discoverable by human reason, but existing independently of the human will; III. PRACTICAL, that is, dependent upon, or arising from human actions; IV. MISCELLANEOUS *(sic.)* The first group is nearly co-extensive with the ordinary classes THEOLOGY and PHILOSOPHY, and the second with SCIENCES, in the ordinary sense of that word. The third group embraces in its comprehensive grasp—"HISTORY," "POLITICS," "LITERATURE," and "ARTS." The last group is our old acquaintance "POLYGRAPHY," under a designation certainly more familiar, but not one jot more vernacular.

The latest scheme with which I am acquainted belongs, (like those just mentioned), to the Philosophical group, and evinces considerable originality under due restraint. It is the production of Dr. W. D. Wilson, Professor of Ethics and of Logic in the Hobart Free College, at Geneva, in the State of New York, and forms part of the closing chapter of his *Treatise on Logic*, published in 1856. Dr. Wilson proposes three principal classes, each of which, he says, "naturally divides itself into two departments, differing in the *first* class, both in the starting point and in the method; in the *second* class they differ in the starting point only; and in the *third* class the two departments differ chiefly in the object in view,—the one producing objects of Beauty, and the other objects of Utility." The classes and their sub-divisions stand thus:—

Class I.—Theoretical Sciences:—
Department 1. Exact Sciences:
1. Meteorology.
2. Ouranography.
3. Geology.
4. Geography.
5. Chemistry.
6. Mineralogy.
7. Anatomy.
8. Physiology.
9. Botany.
10. Zoology.
11. Ethnology.
12. Psychology.
13. History.
Department 2. Pure Sciences:
1. Arithmetic.
2. Geometry.
3. Algebra.
4. Calculus.
5. Trigonometry.
6. Analytic Geometry.
7. Analytics.
8. Method.
9. Ontology.
Class II.—Practical Sciences:—
Department 1. Mixed Sciences:
1. Mechanics.
2. Astronomy.
3. Hydrostatics.
4. Hydraulics.
5. Pneumatics.
6. Acoustics.
7. Optics.
Department 2. Ethical Sciences:
1. Ethics.
2. Polity.
3. Natural Religion.
4. Jurisprudence.
5. Church Polity.
6. Revealed Religion.
Class III.—Productive Arts:—
Department 1. Fine Arts:
1. Gardening.
2. Architecture.
3. Sculpture.
4. Painting.
5. Music.
6. Poetry.
Department 2. Useful Arts:
1. Agriculture.
2. Metallurgy.
3. Technology.
4. Typography.
5. Engraving.
6. Commerce.
7. Medicine.
8. Rhetoric.
9. Political Economy.
10. War.*

Here, then, may close our long survey of the principal schemes which have been proposed for the classification of knowledge and of libraries. I have already indicated my decided conviction that many of those which have cost their authors much thought and labour, although they may indirectly render good service to the student, are ill suited for practical application to catalogues. For that purpose, it cannot be too much borne in mind that the requisite qualities are not logical concatenation, subtle analysis, or striking terminology; but simplicity, clear definition, and (as far as may be practicable) familiar and time-honoured names. There is, however, one direction at least in which the reformer may find useful work, and the lover of novelty ample gratification. There are certain common-sense modifications as to the distinction of the *form* of books from their *substance*, and the extent to which this distinction may fairly affect their true place in a

* Wilson, *Treatise on Logic* (New York, 1856, 8vo.), 341–346.

catalogue, which are quite separable from any positive settlement of all the "laws of the universe," or any exact determination of the true place of man in its midst.

[§ 84. Proposed modifications in the details of classificatory schemes.]

Take, for example, that vast class consisting of the books which bear in common the familiar name of "VOYAGES AND TRAVELS." How many of the number have really nothing in common *but* the name. *The Voyage du jeune Anarcharsis en Grèce*, and the *Voyages en Grèce* of M. Spon; the *Voyage round the World* of De Foe, and the *Voyages round the World* of Lord Anson; the *Voyages des Papes* of John Von Müller, and the *Voyages des Missionaires de la Compagnie de Jésus*, have all titles which look alike, and sound alike, but no bibliographer would place them in the same class. Few bibliographers, on the other hand, might perhaps hesitate to class the *Voyage de Marseille à Lima*, of a certain M. Durret, or the *Narrative of a captivity among the Indians*, of Hunter, or the *Voyage en Portugal*, of Carière, along with the voyages of Anson, or the travels of Clarke; but the first two are fictitious, and the last is the mere re-issue of a guide-book called *Tableau de Lisbonne*. Brunet does not hesitate to place the *Voyage minéralogique et géologique en Hongrie*, of Beaudant, in the class "SCIENCES," under *Mineralogy*, rather than in "HISTORY," under *Voyages*; yet the *Voyage physique et lithologique dans la Campagne*, of Breislak must be looked for in the latter, not the former.* Similar instances might easily be multiplied. Is it not then worth consideration, (and it is but a *suggestion* that I here put forward,) whether the section "Voyages and Travels" might not, with advantage, be abolished as a subdivision of "History," and its contents be distributed according to their real subject-matter and essential character? Thus the *Voyage en Italie*, of Montfaucon, would be classed with works of literary history, and the *Voyage en Icarie*, of M. Cabet, with romances. The *Voyage du jeune Anarcharsis* would then have its subsidiary place, by way of appendix, in the history of the ancient world; and the *Voyages des Papes* would occupy their proper section in that of the Church of Rome. The travels of De Luc would be sought for under Geology; those of Layard and of Vyse under Archæology, and so on. As to the purely descriptive travels, they would follow the systematic Topography of the country to which they

* Brunet, *Manuel*. Comp. Albert, *Recherches*, ut supra.

relate; and as to the works of the traveller who is neither naturalist nor archæologist, who carries no hammer and no microscope; who sets to work neither diggers nor dredgers, describes no country in particular, but rushes from clime to clime, as though

> "Impelled, with steps unceasing to pursue
> Some fleeting good, that mocks him with the view,"

and on his return sends to press a bulky volume, which is half road-book, and half collection of bills of fare, *he* might be allowed the honour of a section to himself, by way, perhaps, of appendix to "Universal History."

Whatever the worth or the worthlessness of this suggestion in other respects, it is clear that on one score, at all events, it would materially simplify the arrangement of a catalogue rich in works of History. So long as in such a catalogue the history and topography of the various countries of the world, and narratives of voyage and travel in those countries form two independent divisions of the class "History," it is obvious that a long repetition of geographical detail is unavoidable.

The desirableness, too, of retaining the usual sub-divisions of Poetry and Prose Fiction as independent sections of the class "LITERATURE" seems fairly open to question. Such a classification is purely one of *form;* it has nothing to do either with the substance or with the aim and purpose of books. The *Telemaque* of Fenelon, the *Utopia* of More, the *Nova Atlantis* of Bacon, the *Civitas Solis* of Campanella, the *Pilgrim's Progress* of Bunyan, have little, indeed, in common with *Joseph Andrews*, or with the *Waverley Novels*. The bibliographer, I think, would not be far wrong who should boldly transfer the first four to the class "Philosophy," and the fifth to that of "Theology;" and in the latter instance he would have the sanction of Coleridge, who has assigned to the *Pilgrim* a place among the "Works of British Divines." It cannot be denied, however, that the innovation would entail difficulties of its own, from the number of works which would lie doubtfully on the border territories, try as we may to define clearly their respective limits. With versified Poetry the task would be especially troublesome, but at all events such works as *The life and death of Thomas Wolsey*, by Storer, and the *De Arte Graphica* of Du Fresnoy, may be safely withdrawn from its domain to those of "Historical Biography" in the one case, and of the "Fine Arts" in the other.

ANCIENT CUSTOMS AND SUPERSTITIONS IN CUMBERLAND.

By A. Craig Gibson, Esq.

(Read 7th January, 1858.)

Of the picturesque province of Cumberland it is difficult to say whether its Scenery, its Geology, its Botany, its Meteorology, its Antiquities, History, Ethnology or Philology presents the most attractive and profitable field for research and observation. Each of these offers ample scope for the powers of the most able investigators, while those of more humble ability may, with the resolution to apply it honestly and earnestly, approach any one of them with fair hope of eliciting something worthy of being recorded. Several of these subjects have been discussed already, in a manner more or less satisfactory; but none have been exhausted, and some scarcely touched. The circumstances, however, under which this paper is prepared, compel me to take up a theme requiring less labour and research than any of those mentioned, and I have selected one for the materials of which I can draw upon personal recollection and observation, and which, if less dignified, has, itself or its kindred, occupied the attention of some who hold high positions in the literature of our country. For these reasons I confine myself to noticing a few of the old customs and superstitions, which, fostered by the primitive habits and secluded position of its people, lingered in Cumberland after they had ceased to exist in other parts of the country.

Even in Cumberland, however, at the present day, we may say with the poet—

> "Many precious rites
> And customs of our rural ancestry
> Are gone or stealing from us;"

and several of those I shall specify in this treatise are either obsolete or rapidly becoming so.

These ancient customs may be arranged conveniently in three classes—Feudal or territorial, Social, and Superstitious. To the first belong the tenures of lands, which, though perhaps not exclusively peculiar to Cumberland, may be noticed briefly as interesting relics of former times.

Many of the old imposts on land, such as cornage, thirlage, soccage, scutage, homage, fealty and military service, once the most important of all, have long been lost sight of, and now most of the lands in Cumberland, whether held on customary or arbitrary tenures, merely pay an almost nominal rent, besides certain fines, to the lord of the manor. Lands of arbitrary tenure pay, with certain deductions, fines of two years' value on the death of lord or tenant, or of both, and on alienation. Some pay dower to the widow, others not. Some lands pay a live heriot, which means the best animal in the tenant's possession; others, a dead heriot, that is, the most valuable implement, or piece of furniture. In Catholic times the Church also, on some manors, claimed as heriot the second-best animal the tenant might die possessed of, and on others the best. There is an old record shewing that the lord of a small manor, for the crime of seizing a heriot before the Church could satisfy her claim, was formally banned by the Bishop of Carlisle, and deprived of Christian privileges till he relieved himself from the anathema, by making restitution and doing penance. In some instances a heriot is only payable when a widow remains in possession of the tenement, and in these cases the original object of the impost has been to recompense the lord of the manor for the loss of a man's military service during the widow's occupancy. In some joint manors where two, or perhaps three, lords have claims for heriots, very discreditable, and, to a dying tenant's family, very distressing scenes are enacted; for, when it becomes known that the holder of a tenement so burthened is on his death-bed, the stewards of the several manors place watchers round the premises, who ascertain what and where the best animal may be, and, as soon as the demise of the tenant is announced, a rush ensues, and an unseemly contest for possession. This, I am glad to say, can only occur in very few localities, and they are confined to the north-east of the county. On arbitrary lands some lords claim all the timber, others only the oak, others the oak and yew, others oak and whitethorn, and so on. In some the tenant is bound to plant two trees of the same kind for every one he fells, but tenants have a right to timber for repairs, rebuilding or implements, though they must not cut down without license. Many lands are bound to carry their grain to the manorial mill to be ground and *multured*, but this custom has fallen into disuse. Most lords retain the minerals and game if they enfranchise the soil, as many have done. Many lands used to pay boons of various kinds, and some of these services are still enforced. By these were demanded so many men or boys, horses, carts, &c., in peat-

cutting time, hay time, harvest, wood-cutting and carting, and so on. In the east of the county, the tenants were obliged to send horses and sacks to St. Bees, for salt for the lord's use: some had to bring their own provisions when engaged in these services: some were entitled to a cake of a stated size for each man, and a smaller for a boy, on assembling in the morning at a fixed hour, under a certain tree, as was the custom at Irton Hall. Breach of punctuality forfeited this cake, but the work was always exacted. Certain farms in some manors were bound to maintain male animals for the use of all the tenants, subject to various conditions and regulations. Formerly many tenants paid a pound of pepper at the lord's court, others only a peppercorn, and some lands are still held by this custom. There were many other peculiar customs connected with the tenure of land which I need not describe.

Curious individual exemptions from certain burthens are to be met with occasionally. In the parish of Renwick a copyholder is relieved from payment of the prescription in lieu of tithe, paid by all his neighbours, because one of his ancestors slew a *crackachrist* (a curious misnomer for cockatrice.) This carries our imaginations back to Moor of Moor-hall and the Dragon of Wantley; but the Cumbrian monster is alleged to have been nothing more formidable than a bat of extraordinary size, which terrified the people in church or vestry one evening, so that all fled save the clerk, who, valiantly giving battle, succeeded in striking it down with his staff. For this exploit he was rewarded with the exemption mentioned, which is still claimed by his successors.

A genuine specimen of feudal observances is preserved in the custom of riding the boundaries of manors, which, in the mountain district, where the line of division is not very distinct, is performed perhaps once during each generation, by the representatives of the lords of the manor, accompanied by an immense straggling procession of all ages,—the old men being made useful in pointing out important or disputed portions of the boundary, and the young in having it impressed on their memories, so that their evidence or recollection may be made available in future perambulations. In older times, when the interests of the lords outweighed farther than in our own day the rights of the peasantry, certain youthful members of the retinue, in order to deepen the impression and make it more enduring, were severely whipped at all those points which the stewards were most anxious to have held in remembrance. These occasions always wind up with a banquet, provided on a most liberal scale by the lord of the manor, and open to all who

take part in the business of the day. A local usage connected with the landed interest, and long observed with notable regularity, was the following. When salmon were plentiful in the Cumberland rivers, and formed a very important element in the ordinary living of the occupants of adjoining lands, the tenants of the manor of Ennerdale and Kinniside claimed "a free stream" in the river Ehen, from Ennerdale lake to the sea, and assembled once a year on horseback to "ride the stream." If obstructions were found, such as weirs or dams, they were at once destroyed. Refreshments were levied or provided at certain places on the river, and as all the members of the cavalcade had to partake largely of these, either by compulsion or choice, rude practical jokes, of a very moist character, were freely indulged in, and none of these saturnalia ended without many battles; quarrels, commenced in sport, having to be settled in earnest, either there and then or at the next yearly riding. This custom has long ceased to be observed; the Ehen is thronged with weirs, and salmon hardly exist in it. Mentioning salmon reminds me of a remarkable method of taking that fish formerly practised in Cumberland, and noticed in the novel of Redgauntlet. This was hunting salmon on horseback, of which unique sport one Richard Graham, who, about seventy years ago, was lessee of the fisheries at the mouth of the Derwent, has left a description preserved in a note to Hutchinson's History.

The Cumbrians had their own habits of conferring territorial dignities. It is still the universal custom to call a holder of a piece of land, however small, and under whatever tenure, "a 'statesman," and formerly, in some localities, a landholder's eldest son had the Scottish title of "laird," his eldest daughter was styled "lady," and the owner of every petty manor was designated "lord," so that, according to an old writer on Cumberland manners, we might see a statesman holding the plough, Lady Bell labouring at the churn, and Lord Ritson attending the market with turnips to sell.

The ancient hostility of the men of Cumberland to the Scots still exhibits itself in various forms; even in the games of the boys it is often to be noticed, as, for instance, in their manner of playing the common game of "prison bars"—the two parties engaged in which call themselves Scotch and English, and when one of the English side passes the boundary, he cries, "here's a leap on thy ground, dry-bellied Scot," conveying a contemptuous allusion to the staple food of the Scotch. In the old moss-trooping times, as is well known, the wardens of the opposite marches, largely attended, occasionally met for the transaction of business. Strict

truce was always observed at these meetings, and, whilst the leaders were arranging the affairs of the borders, their followers, laying their enmity aside, engaged in friendly contests at various games, the principal and favourite being that of foot-ball. A trace of these old contests remains in the annual match of foot-ball still held on Easter-Tuesday at Workington, the sailors with the ship-carpenters playing against the colliers of the district. The victory is generally disputed with extreme bitterness, so that even lives have been lost in the struggle, and the orderly classes there would gladly see this lingering vestige of feudal sports follow those that have disappeared.

In treating of social customs, we must of course give precedence to those appertaining to marriage; and in Cumberland some of the most curious were seen in what were called bride-wains (the second syllable of this word, according to Sullivan, is from the Danish *vane*, a custom.) These festivals resembled, in some respects, the penny-weddings of Scotland, and proceeded thus. A young couple, poor enough in worldly goods, but resolved to encounter the trials of married life, having fixed upon the wedding-day, the whole country, for ten or twelve miles round, was invited to share in the festivities; and to accomplish this very general invitation, various means were adopted. Ten or twelve young men would scour the country on horseback or a-foot to summon distant residents; in the yard of the parish church, after morning service, the clerk, mounted upon a tombstone, gave intimation of the coming event to the congregation; and when newspapers began to circulate in the county, the same comprehensive invitation was sometimes given in their columns by way of advertisement. Some of these, cut from the *Cumberland Pacquet* of 70 or 80 years ago, are in my possession, and one specimen, partly in rhyme, as it appeared in that paper in 1786, illustrates this part of my subject so perfectly, and is so curious in itself, that I should be tempted to give it here, had it not been already republished in *Hone's Every-day Book*, *Chambers's Journal*, and elsewhere. In another of these advertisements, a countryman invites the whole county to a hunt and other sports,—to the wedding of his daughter,—and to the sale of his household furniture,—all combined to form one great festival.

The sports at these bride-wains were racing,—by horses, donkeys and men,—wrestling, fencing, leaping and other athletic games, of which the Cumbrians have always been passionately fond, and in which they still excel. After the ceremony, these, with eating, drinking and, of course, dancing,

filled up the day and night; but the characteristic feature of these meetings was the manner of carrying out the object for which they were drawn together. The bride, seating herself in some conspicuous situation where she would be passed and seen by all the multitude of guests,—say on their way to or from the refreshment tables,—with a large wooden platter or pewter dish in her lap, invited contributions from all and sundry. All contributed according to their means, and many very liberally; so that when the expenses were paid, a sum would remain sufficient to enable the parties interested to make a respectable start in housekeeping. This old custom has died out within the last thirty years, as also has that of having a house built by subsidizing the boon-work of neighbours, in this case chiefly the young men and women, who, always ready to help each other, to say nothing of the anticipated dance and merriment, would assemble about dawn at the appointed spot, and labouring with good will, each at an allotted task, would erect, long ere sunset, the clay walls of a dwelling for some young couple who probably had to rely upon a bride-wain for means to finish and furnish it. The walls reared and the floor laid, of the same material, the volunteer operatives would *hansel* the cottage by a dance on the wet clay floor. Those who have witnessed the energetic dancing of the Cumbrian peasantry will agree that this would be by no means the lightest part of the day's task. Many cottages with clay walls and thatched roofs, built by this method, which was called "a clay-daubing," are still to be seen in the northern parts of the county.

A very ancient wedding custom in Cumberland was that of breaking a cake over the head of the bride and distributing it amongst the guests; generally performed after the ceremony by the bridegroom, standing behind the bride seated on a chair, her head covered with a white napkin. Besides these there were several other bridal usages, of which, as they have happily disappeared, it were scarcely profitable now to revive even the recollection.

After marriages, we legitimately come to the customs connected with births. Of these the only one I have remarked as being confined to Cumberland, is the fashion of making, for the regalement of gossips and callers, a compound called room, or rum, butter; I am not certain which name is correct. It is a concoction of butter, sugar, spirits and spices, and when eaten in the orthodox manner, with crisp oaten cake, is not so disagreeable as might be supposed. The quantity consumed in some country houses, after the arrival of each little stranger, is something quite wonderful,

especially in the more thinly-peopled localities, where, as would scarcely be surmised, the number of congratulatory visitors is always the greatest. The humble dwelling in one of the fell dales, of a worthy clergyman who has reared twenty-one children on an annual income of less than £70, has witnessed the preparation and consumption of forty-two stones of this Cumbrian dainty, or 28lbs. at the birth of each child.

Passing from one extreme of human life to the other, I have noticed in some of the towns of West Cumberland a funeral custom that I have not observed elsewhere. On the day preceding that appointed for an interment, the parish clerk passes through all the streets, carrying a bell of very dolorous tone, and proclaiming at the corners that all friends and neighbours are desired to attend the funeral of their deceased fellow-citizen. The country funerals are chiefly remarkable for the quantities of refreshments disposed of by the guests. An old north-country proverb tells us that "sorrow is dry;" on some of these solemn occasions I have felt tempted to append to it, "and sympathy is hungry." A curious word, now becoming obsolete, was applied to meat and drink given at funerals, namely, *arval*. A recent Philologist, already quoted, says the word is derived from the Danish *arv*, a heritage, or *arvelig*, hereditary, and adds, "there appears to be some superstition connected with the origin of the word, as if of a bequest from the deceased to ward off the danger of evil grudges." The mountain fox-hunters apply the word to the allowance of ale they are entitled to at the expense of the township wherein they kill one of those animals, which are there regarded as destructive vermin, not preserved as a means of sport. Thus they would say, "we killed him on Walna Scar, and drank his arval at Newfield."

Old observances of anniversaries have lingered in Cumberland probably later than in other parts. At Christmas the customs, but faintly observed elsewhere, are still in full force. Village children sing their ancient carols from door to door in the evenings, and the performances and salutations of the adult nocturnal minstrels are very beautifully described by Wordsworth, in the verses dedicating his sonnets on the Duddon to his brother. Bands of juvenile actors, of whose performances Sir W. Scott says—

> "Who lists may in their mumming see
> Traces of ancient mystery,"

still levy contributions in money and Christmas cheer in the rural localities. The antique hospitality of Cumberland glows at Christmas with

all its pristine lustre, and it is considered both unlucky and ungracious either to withhold or to decline the offer of this hospitality.

On New Year's day the only peculiar custom I have seen was what they called "stanging," called elsewhere "lifting." This consisted in seizing unwary individuals in the roads or streets, forcing them into an arm-chair—formerly upon a pole or *stang*—and carrying them off shoulder high to a public house, when they were restored to liberty on payment of a trifling ransom.

Various seasons and days had special viands assigned to them. At Candlemas, the season in some districts for making annual settlements of accounts, ale posset was eaten with great solemnity. The Monday before Lent is called Collop-Monday, this ugly word being Cumbrian for meat cut in slices, whether steaks, chops or rashers, which last are eaten on that day. On the day following, the staple dish is that devoted to the day in most parts of the kingdom. Ash-Wednesday was called *Hash*-Wednesday, and hashes or stews were the proper viands. The remaining days in the week had respectively their own dishes, which it is hardly necessary to specify.

The beginning of Lent was one of the seasons when barrings-out were perpetrated by the school-boys, who garrisoned, provisioned, and barricaded the school against the master, and generally sustained a siege of three days; otherwise they were subjected to severe tasks and punishments. At the end of that period, custom obliged the master to propose terms of capitulation to his refractory subjects, which comprised stipulations for holidays, and permission to proceed immediately to certain sports, the chief of which were foot-ball and cock-fighting. At some places a prize, in the form of a small silver bell, was provided for the latter sport, and the boy who brought the winning bird wore this attached to the button of his hat on three consecutive Sundays. Previous to its suppression by the magistracy and public opinion, cock-fighting was practised at the Cumberland schools to a very disgraceful extent. In some schools an annual offering is still made by the boys to the master, called a cock-penny, originally established for the purpose of promoting that cherished amusement of the "good old times."

The fifth Sunday in Lent was called Carling Sunday, the dish assigned to the day being "carlings," or peas softened by soaking, and then fried in butter. And the young people went about pelting each other with uncooked carlings as they do in the Italian carnivals with sweetmeats.

On Good Friday the Cumbrians regale themselves with a mess called figsue, consisting of bread and figs boiled in ale. At Easter large quan-

tities of eggs are converted into pace-eggs for distribution amongst the children, parties of whom, dressed in character, go round the different neighbourhoods, entering each house, one by one, as they are announced by their leader, in a song for the occasion, each striking in as he enters and taking his place in a march round the apartment. There is a belief prevalent amongst the children, that if they go out on Easter Sunday without some new clothing, they will be subjected to grievous indignity by the crows. Mulled ale or egg-flip is drunk in great quantities in the evening, the men resorting to the village inns for the purpose.

Far into the last century, Beltane fires were lighted all over the country on the eve of May-day. It is a very curious fact that this relic of the old pagan rites of the country should survive so many ages of christianity. Boughs of the mountain ash, still called witch-wood, and supposed to be protective against all evil influences, were carried by the people round these fires; and, within my own remembrance, leaves and twigs of this tree were inserted into keyholes and suspended over doors of houses to prevent witches or other infernal agents from injuring the inmates.

On All Saints' eve the incantations and ceremonies were practised that Burns's poem of Hallow-e'en has rendered so familiar, besides a few not mentioned in it.

On the eve of St. Agnes, young women fasted and went backwards to bed, in order to dream of their future husbands.

This may be classed amongst the superstitious customs, as also may some other rites practised at any season with a similar object, such as placing a four-leaved clover, nine peas in one pod, &c., under the pillow. The peel of an apple or turnip taken off entire, had wonderful virtues of this kind; thrown carelessly on the floor, it would form the initials of the destined partner; and, when hung over the outer doorway, the first man that entered was the man himself, or, if married, the Christian names would be similar. Another favourite conjuration was breaking the first egg laid by a pullet into a glass of water, where it was expected to arrange itself so as to shew the occupation of the future husband, as in the form of a ship for a sailor, a plough for a farmer, and so on. The list of ceremonies of this description might be greatly extended.

Amongst other superstitions, omens, good and bad, are very abundant in Cumberland. It is a bad omen to see the new moon for the first time through glass, or without money in the pocket; but if young girls turn their aprons at first sight of the new moon, and wish, their wishes will be

granted. It is a good omen to see the first foal of the year with its head towards the spectator: a bad one if reversed. It is lucky to find a piece of iron, but very unlucky to pass it—it should be picked up, spit upon, and thrown over the left shoulder. It is unlucky to help any one to salt, and every grain of wasted salt brings a grain of sorrow to the waster. A hare crossing the path is so ominous of evil, that I have known people turn back and defer important errands when it has occurred. Whistling maids are very unlucky, and so are crowing hens. In short, all sorts of incidents are made to bear superstitious fruit; and events the most commonplace are endued with a significance that ordinary people would never dream of attaching to them. I suspect that interchanges of omens have been made across the border, for very many that are common in Cumberland are also current in Scotland.

A curious superstition is cherished with regard to bees. When a member of a household dies, it is considered necessary to make formal announcement of the event to the inmates of the apiary, otherwise they would either die also or desert the hives.

The not uncommon belief that a dying person cannot die on a bed that happens to contain any feathers of the pigeon also prevails in Cumberland; and I have seen more than one instance when on the mere possibility of that being so, patients, sinking slowly, were taken out of bed and laid on the floor to die. As the fatal result is precipitated by the removal, each case strengthens the superstition.

Their faith in the virtues of what they call need-fire as a remedy for, and preventive of, disease in cattle, furnishes another instance of the long existence of a very ancient superstition, Sir Walter Scott, writing in 1828, says, "This charm was used within the memory of living persons in the Hebrides, in cases of murrain amongst cattle." Sir Walter says that need-fire means *forced* fire, in allusion to the means used to procure it. Mr. Sullivan, on the contrary, says it means cattle-fire, and comes from the Danish *nod*, whence also is the northern word nolt or nowte. In 1841, when the cattle-murrain prevailed in Cumberland, I had many opportunities of witnessing the application of this to animals both diseased and sound. To ensure its efficacy it was necessary to observe certain conditions. The fire had to be produced at first by friction, the domestic fires in the neighbourhood being all previously extinguished; then it had to be brought spontaneously to each farm by some neighbour unsolicited; and neither the fire so brought, nor any part of the fuel used, must ever have been under a

roof. These conditions being kept, a great fire was made, and the cattle driven to and fro in the smoke. One honest farmer who had an ailing wife and delicate children passed *them* through this ordeal, as was averred with most beneficial effect. Another, a near neighbour of my own, inadvertantly carried the fire just brought to him into his house to save it from extinction by a sudden shower. It was declared that, in his case, the need-fire would be inoperative, but, as I remember, his stock did as well ultimately as any other.

Charms for physical ailments incident to man, are popular as well as pleasant remedial agents. Different texts of scripture, written on scraps of paper by some one endowed with the requisite powers, will check hæmorrhage, relieve toothache, and cure ague and jaundice, but in the last disease the action of the charm must be expedited by a mysterious pinch of the left ear. Whooping-cough was cured by passing the patient under the belly of a donkey, or taking him into some excavation under ground. An eel's skin loosely fastened round a limb exempts it from all liability to cramp; and a living toad carried about the person in a box is a certain preventive of rheumatism, though some prefer for this purpose a lump of brimstone in the pocket. Charms for the eradication of warts are numerous; but perhaps the most approved, as well as the most elaborate, is to count them carefully, then to put the same number of little stones or knots of oat straw into a linen bag, and throw it over the left shoulder where two roads cross, and the excrescences will speedily depart from the hands of the thrower and settle upon those of the finder. This list might also be greatly extended, for charms and other popular remedies of equal efficacy are so many and so much believed in, that it is difficult to understand how disease happens to exist amongst them at all.

Individual superstitions, or what may be called superstitious whims, are of frequent occurrence; with one striking instance of these, dating from the middle of last century, I became acquainted in my boyhood. In a field in the parish of Harrington there is a low square pillar of stone, bearing upon its summit the following inscription, still very distinct.

> "Joseph Thompson may be here found,
> Who would not lie in consecrated ground;
> Died May 13th, 1745,
> Aged 63 when he was alive."

Of Joseph Thompson, the story current amongst the old people was this:—Either from disease or injury, he underwent amputation of a thumb, which according to use and wont, was carefully interred in the burial

ground surrounding the parish church. Now, it is well known that after amputations the extremities of the divided nerves in the stump occasionally undergo inflammatory action, causing intense pain which may endure long after the wound is healed, and which appears to the patient to have its seat in the amputated part. Joseph Thompson suffered from this painful affection; and, unable to account for it otherwise, at length persuaded himself that it was attributable to the burial of his thumb in the churchyard; acting on this persuasion, he had it disinterred and buried elsewhere, and the pain ceased either immediately or soon enough to connect, in his mind, the relief with the removal. Inferring then, that since so small a member as the thumb had suffered so terribly in consecrated earth, the whole body, if buried there, would be subjected to tortures proportionably greater, he exacted, before he died, a promise that his friends would inter him in the field where he has rested now for more than a hundred years.

Of the supernatural beings in whose existence they believe, I think we must give precedence to fairies. Although no longer supposed to exist, legends, connected with this branch of popular mythology, are still rife, and of these the following may suffice as a specimen:—The tourist who ascends the noble mountain called the Old Man of Coniston, may notice, from the road approaching the copper mines, a narrow excavation or niche cut obliquely across the face of a rocky precipice, high above the works. This is called by the people there, "Simon's Nick;" and it is related that long ago, when fairies were something more than a traditional myth, a miner named Simon obtained, under their direction, large quantities of rich ore from that niche, to the great mystification of his neighbours, who had not been able to find any trace of copper there. Simon underwent much questioning as to the source of his inscrutable success, but secrecy being one of the articles of his treaty with the fairies, he for a long time resisted all attempts to make him divulge it; being, however, unhappily addicted to beer, under the influence of that great subverter of all discretion, he violated this important condition of the contract, and his good fortune at once ceased. Through self-reproach and vexation he afterwards became reckless in the pursuit of his dangerous employment, and soon paid the penalty of his weakness with his life, leaving his name to the singular looking excavation that remains to attest the truth of his story.

As there were fairies in the land long ago, so also there were giants; and proof of their existence has been found in the gigantic skeletons disinterred at Aspatria, St. Bees, and other places in the county. It is also

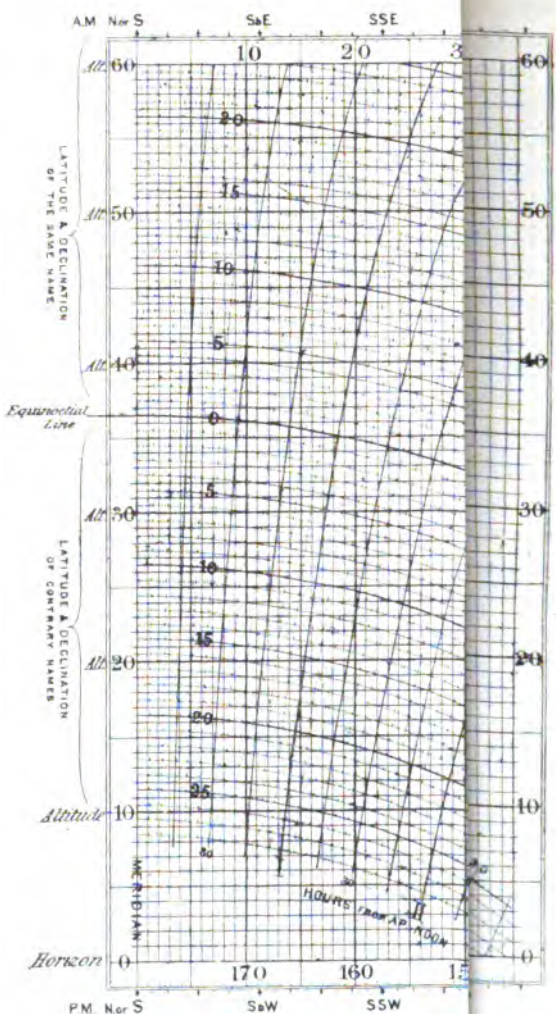
believed that the two remarkable pillars in Penrith church yard, standing fifteen feet apart, mark the length of the grave of *Ewan Cæsarius*, an ancient hero, who once amused his leisure by slaying wild boars and other monsters in the adjacent forest of Inglewood. These, however, dwindle to very contemptible proportions when compared with the popular conception of the giants of old. There is, in the Solway Frith, a few miles north of Allonby, a bank consisting of stones, and called Dub-Mill Scar. This Scar was formed by stones that fell short in a pelting-match between a Cumbrian giant, who resided on or in Skiddaw, and one of the same race who inhabited the Scottish mountain Criffel, on the opposite coast. Evidence of the truth of this legend is discovered in the stones forming the bank, which are said to be of the same formation as those upon the two mountains.

Localised superstitions assigning to particular spots their own peculiar, and often appropriate, apparitions, are common enough in most parts of the county. Some of these are attached to streams, as that at Salter-beck near Workington; some to woods, as the spectral horseman in the Devil's gallop, near Hawkshead; some to lanes, as the headless women at Branthwaite Nook; some to hills, as the murdered gardener's ghost on Oxen fell; some to lakes, as the Crier of Claife on Windermere, and the phantom boat on Thirlmere; some to lonely waterfalls, as Airey force and Dungeon-Ghyll; some, of more social tastes, to the streets of populous towns, as Whitehaven; some to ruins; some to inhabited houses, and some even to ships. Many of these, so far from being common-place apparitions, possessed features highly picturesque, either in the story of their origin, or in their modes of exhibiting themselves.

The boggle, for instance, at Salter-beck, a small stream that runs into the sea a little south of the Derwent, was wont to appear in the startling shape of a coffin borne by four drunken sailors, staggering along and vanishing suddenly with a loud cry as they reached the middle of the water-course. This, it was said, originated in the catastrophe that befel the funeral *cortège* of a noted smuggler, who like "Will Watch" in the song, was at the dead of the night being "borne to the earth by the crew that he died with;" and with them was swept into the sea by this little stream, then unusually swollen by rain.

How the fall on Ullswater, called Airey force, came to be a haunted place is familiar to all readers of Wordsworth; and Coleridge, in his beautiful

AZIM


A.M. N or S
SbE
SSE
10
20
3
Alt. 60
Alt. 50
Alt. 40
Alt. 30
Alt. 20
Altitude 10
Horizon 0
LATITUDE & DECLINATION OF THE SAME NAME
Equinoctial Line
LATITUDE & DECLINATION OF CONTRARY NAMES
20
15
10
5
0
5
10
15
20
25
30
MERIDIAN
HOURS FROM AP. NOON
170
160
P.M. N or S
SbW
SSW

AZIMUTH CARD FOR THE LATITUDE OF LIVERPOOL.

By Mr. W. W. Rundell.

(Read 15th January, 1857.)

The accompanying diagram for showing the true bearing of the sun at any minute of time, by mere inspection, is intended for the use of captains of ships, when approaching or leaving the port of Liverpool, and will enable them to ascertain, with great ease, if their compasses are correct, or, the amount of deviation for which allowance must be made if their compasses are in error.

DESCRIPTION OF THE DIAGRAM.

The horizontal lines numbered from 0 to 60 in the side margins show degrees of altitude from the horizon.

The vertical lines, numbered at the top and bottom of the diagram, indicate in degrees, *azimuths*, or angular distance from the meridian measured on the horizon,—the corresponding points of the compass are also shown; the morning points at the top, and the afternoon points at the bottom of the diagram.

The curved lines running from the meridian (marked S for south,) to the straight line at the bottom (marked horizon) represent the sun's path for each degree of north and south declination, every fifth degree being conspicuously numbered. These lines are divided to show hours and minutes of apparent time, reckoned from noon (*hour angles*); the hours being indicated by the usual Roman numerals, the quarter hours by dark lines, and the minutes by small dots, every fifth minute having a larger dot.

RULES FOR USE.

I. By a watch, set to apparent time, at place, find how many hours and minutes from noon (the nearest five minutes will suffice); observe where the line representing the *time from noon* meets the line of *declination* for the day of observation; the nearest vertical line to this point will show the sun's true bearing.

II. If altitude be used instead of time—observe where the line of altitude meets the line of declination; the nearest vertical line shows the sun's true bearing.

III. If the *magnetic bearing* of the sun be required, apply the variation to the true bearing. At Liverpool, for 1858, the variation is 23.50 W.

REMARKS.

It will be evident to the navigator that the diagram may also be used to find the true bearing of the moon, the planets, and many bright stars, in the same manner as for the sun; and thus the indications of the compass may be checked at night, when the heavenly bodies are visible, with nearly the same facility as by day.

The lines of declination have been carried to 30° above the equinoctial line, and to 28° below it, so as to include extreme declinations of the moon and planets, and the declinations of many bright stars.

EXAMPLES.

Object.	Altitude.	Hour Angle, or, Time from Noon.	Declination.	True Azimuth.	Magnetic Bearing.
Sun.	..	3 h. 11 m. P.M.	23° S.	S. 43° W.	S. 67° W.
Sun.	..	11 h. 5 m. A.M. (or 0 h. 55 m.)	16° S.	S. 14° E.	S. 10° W.
Moon.	18° (P.M.)	..	28° N.	N. 67° W.	N. 43° W.
Venus.	15° (A.M.)	..	25° N.	N. 68° E.	E. 2° S.
Aldebaran.	..	5 h. 30 m. P.M.	16.13 N.	W. 4° N.	W. 28° N.

It should be observed that when *time* is used with this diagram to obtain the bearing of a heavenly body, a difference of one or two degrees in latitude will produce only a small error in the azimuth; the diagram will therefore be sufficiently correct for any part of the Irish Sea.

A gimballed *Dumb-Card*, with adjustable sight vanes, lubber line, &c., is strongly recommended for ascertaining the true direction of the ship's head, in connexion with this Azimuth Card, as much more convenient and accurate than the ordinary Azimuth Compass.

ON THE LEPIDOPTEROUS INSECTS OF THE DISTRICT AROUND LIVERPOOL.

By Mr. Charles Stuart Gregson.

(Read 17th December, 1857.)

(Continued.)*

I now lay before the Society the last part of my list of the Lepidoptera of the district around Liverpool. That such lists may seem dry and unprofitable to some of our friends, I can perfectly understand; but when viewed as guides to those who are now growing up, I have no doubt but you will agree with me, that to them, at least, they will prove invaluable *time-savers*. And as it has been well said, that he who can increase the growth of corn in a given space, is a benefactor to his country, so they who can enable a man to do more work, or to gain more knowledge, in a given time, will not have lived in vain. The rising generation will owe much to your Society for what it has already done, and for what it is eventually likely to do; for, without such a society, this and similar lists could not possibly have been published; since, though the labour entailed may be, and, in the present case, is, a labour of love, the pocket is not so elastic as the will, especially among the practical naturalists; and could not possibly bear the strain of a publisher.

I have endeavoured to make more errors of omission than of commission; and whenever I have doubted the locality given to me by others, I have omitted the species, choosing that those who follow me shall have the pleasure of adding to the lists, rather than that I should run the risk of sending a collector about the country in the busy season on questionable authority.

I have to thank those who have given me information, and have acknowledged it in the course of this paper; but for the body of the notes I have referred to memoranda made during the last twenty years or thereabouts.

* See Vol. vii., p. 237, Vol. viii., p. 153, and Vol. ix., p. 165.

PART VII. Section 10.

Heterocera.

Crambidæ.

Family 1.

Genus 1. Chilo.

C. forficellus, Thbg.—In most swampy places where wild mint grows, particularly in the parish pits at Liscard behind New Brighton. June and July.

C. mucronellus, Sco.—I have seen a specimen of this species taken in our district, but could not ascertain the precise locality. I fancy Bidston marsh.

Family 2.

Genus 2. Crambus.

C. hamellus, Thbg.—In the rough plantations beyond Eastham. July.

C. Dumetellus, Hub.—Grassy places on the sand hills at Wallasey, particularly near the rabbit warren. July.

C. pratellus, Lin.—Abundant upon waste land and damp pastures. Summer.

C. pascuellus, Lin.—Plentiful among heath in Jackson's wood and on Prenton hill. July.

C. hortuellus, Hub.—Plentiful behind New Brighton hotel. July.

C. falsellus, W. V.—Upon old moss covered garden walls around Hooton.

C. Pinetellus, Cl.—This seems a scarce insect about here. All I have seen I took from the young firs in Jackson's wood by beating. July.

C. latistrius, Haw.—Not uncommon among *Pascuellus* in Jackson's wood, Claughton; on the wing from dusk until quite dark. I have taken a few on Crosby sand hills, but this appears to me to be a most unlikely place for it. July.

C. culmellus, Lin.—Everywhere. July.

C. inquinatellus, W. V.—In the rough plantations near Hooton. End of June, and July.

C. geniculellus, Haw.—Wallasey sand hills, grassy places. July.

C. perlellus, Scop.—Sand hills, and Kirkby and other mosses. July.

C. selasellus, Hub.—Sefton meadows, on the banks of the river Alt. July.

C. Warringtonellus, Sta.—On the wet parts of Simonswood moss. July.

Phycitidæ.

Family 1.

Genus 1. Aphomia.

A. colonella, Lin.—Comes to sugar in the plantations at Wallasey. I have recently ascertained that the larvæ of this species live in wasp nests; it has long been known to frequent bee hives in the south of England.

Genus 2. ACHROREA.

A. grisella, Fab.—Where bees are kept; fortunately not abundant in this district. I have seen the honey in bee hives quite destroyed by this little pest in the south of England.

FAMILY 2.

Genus 1. PEMPELEA.

P. dilutella, Hub.—Not often met with; I have taken it at Prenton, and in an old lane at Prescot. Juue.

P. carbonariella, F v.R.—Is plentiful upon the burnt patches on mosses, where it seems to remain upon black places in preference to any other locality. July.

P. palumbella, W. V.—Edges of swampy places in Jackson's wood and at Hooton; on the wing from five to seven p.m. July.

FAMILY 3.

Genus 1. ANERASTIA.

A. lotella, Hub.—Plentiful among the star grass on the sand hills. July.

Genus 2 EPHESTIA.

E elutella, Hub.—Plentiful in the streets near the docks, in June and July. On the wing at evening.

E. semirufa, Haw.—Plentiful in "Twigg and Crosfield's" rice and cocoa mills, Bedford Street. June, July, August, September.

E interpunctella, Hub.—Sitting upon warehouse dóors and walls where fruit and grain have been stored; Chapel Street, Water Street, Temple Court, &c. August, September.

Genus 3. HOMŒOSOMA.

H. nimbella, Zel.—Not uncommon at Flaybrick hill among brambles, or at Wallasey sand hills, but local there opposite the lane end which leads to Wallasey village, and also on some grassy hillocks about three hundred yards lower down towards Leasowe. On the wing at dusk.

FAMILY 5.

Genus 1. ACROBASIS.

A. consociella, Hub.—Bred from oak leaves collected at the rough plantation beyond Hooton. July.

A. tumidella, Zel —I have seen one specimen taken in our district, Cheshire. No locality given.

A. augustella, Hub.—I once met with this insect in Prenton village and took six specimens, which are all I have seen. July, 1852.

Genus 3. CRYPTOBLABES.

C. bistrigella.—A single specimen, in Woolton wood, is all I have seen here, beat from a young birch in June.

Genus MYLEOIS.

M. recurvella, Gr ?—A specimen of this species was shewn to me lately, said to have been taken here. No locality given.

PART VIII. SECTION 11.

HETEROCERA—TINEIDÆ.

FAMILY 1. EXAPATIDÆ.

Genus 1. EXAPATÆ.

E. gelatella, Lin.—Taken on an old fence at Rainhill. October, 1852.

Genus 2. DASYSTOMA, Curt.

D. salicella, Hub. Near Bromborough mill, and at Huyton; old mixed hedges. End of April.

Genus 3. CHIMABACCHE, Zell.

C. phryganella. Hub.—Plentiful at Eastham wood, flying about two o'clock p.m. October.

C. fagella, W. V.—Plentiful in woods, in April, on the tree trunks.

FAMILY 2. TINEIDÆ.

Genus 1. TALÆPORIA, Zell.

T. pseudobombycella, Hub.—Cases plentiful around Bidston hill, on heath and tree trunks. Spring.

T. inconspicuella, Sta?—Cases found upon Scotch fir trees at Jackson's wood, by Mr. Diggles, but not bred.

Genus 3. DIPLODOMA, Zell.

D. marginepunctella, Step.—Single cases found on old posts, near Simonswood moss. I have seen a series, in the perfect state, taken in the district, but I do not know where; certainly in Cheshire.

Genus 4. XYSMATODOMA, Zell.

X. melanella.—I took the only specimen I have seen here in Prenton wood on lichen. July 3rd.

Genus 5. OCHSENHEIMERIA, Hub.

O. Birdella, Curt.—Plentiful in a sand hole in the field opposite Hose farm, behind New Brighton. June.

O. Bisontella, Lienig.—On the slope inside Bidston park wall, near the lighthouse. August.

Genus 7. TINEA, Zell.

T. imella, Hub.—Three specimens only: one by Mr. Edmondson, and two taken on old posts, Linacre marsh, by myself. June. Is it a feeder on rotten timber?

T. ferruginella, Hub.—In 1853 I met with this species upon rotten fir logs lying in Kirkby wood—fir. July.

T. rusticella, Hub.—Plentiful in outhouses and store rooms.

T. fulvimitrella, Sod.—First discovered by P. H. Newnham, Esq., in Pigue lane, near my house, on an old decaying oak tree: was then plentiful.

T. tapetzella, Lin.—A destructive insect to woollens in warehouses and store rooms.

T. arcella, Fab.—Once in an old hedge near Little Britain at Kirkby.

T. Granella, Lin.—In profusion in grain stores.

T. cloacella, Haw.—Plentiful in rotten posts in old fences about Knowsley and Kirkby.

T. misella, Zell.—Plentiful around Jones's farm outbuildings at Tranmere. June; feeds in the granaries there.

T. pellionella, Lin.—Plentiful in store rooms; in houses.

T. fuscipunctella, Haw.—Abundant in stables, &c.

T. pallescentella, Sta.—A species I discovered in the streets of Liverpool several years ago, which has not been taken any where else. I took one specimen in Hanover street, this summer.

T. merdella, Zel.—Discovered by Mr. N. Cooke in wool warehouses, hitherto unique in Prof. Zeller's collection. July, August.

T. nigrifoldella, Greg.—Discovered in wool warehouses by myself. Plentiful. July, August.

T. Lapella, Hub.—Old hedges, not scarce. June.

T. biselliella, Hum.- Plentiful.

T. nigripunctella, Haw.—Two specimens are all I have taken; Wallasey, near Mrs. Boode's monument Does it feed upon rotten gorse?

T. semifulvella, Haw.—Bred from old birds' nests. Many specimens have been taken by Mr. Almond and others on the Claughton park fences.

T. bistrigella.—Birchwood, Woolton. May.

Genus 8. LAMPRONIA, Zell.

L. quadripunctella, Fab.—Plentiful where wild roses grow; flying in the morning early. June.

L. Rubiella, Bjk.—In profusion in old gardens among the raspberry trees, and on the mosses where raspberries grow wild. June.

Genus 10. INCURVARIA, Haw.

I. muscalella, Fab.—Plentiful in hedges in May, especially where birches grow, as at Warbrick moor, &c.

I. pectinea, Haw —This species is in plenty amongst birches in April.

I. Oehlmanniella, Hub.—Not often met with around here, yet I have taken it at Birch wood, Woolton, Bidston wood, and at Hooton. May.

Genus 11. MICROPTERYX, Zell.

M. calthella, Lin.—New Brighton, Patrickwood, and at Childwall, freely in buttercups and other flowers. May.

M Seppella, Fab.—Not scarce at New Brighton. May, June, in flowers.

M. Tunbergella, Fab.—Croxteth and other woods where beeches and hollies grow. May. Beat the hollies for them.

M. purpurella, Haw.—Plentiful amongst young birches on the mosses. April.

M. semipurpurella, Step. } With purpurella—if not all one species, I am
M. unimaculella, Zett. } mistaken.

M. Sparmannella, Bosc.—Amongst the young birches on Simonswood moss; local. Early in May Pass "Pye's" farm, and make for the first birch plantation from there.

M. subpurpurella, Haw.—The lane leading from Eastham wood to Bromborough is the best place I know for this species. Beat hollies near oaks in May for it.

Genus 12. NEMOPHORA, Hub.

N. Swammerdammella, Lin.—Common in woods. June.

N. Schwarziella, Zell.—Common in old lanes. May.

Genus 13. ADELA, Lat.

A. Fibulella, W. V —In the lane which leads through Patrick wood, on flowers. May. Evening.

A. rufimitrella, Scop.—Bidston marsh, below the plantations, at noon, in the flowers of "Cardamine pratensis" when the sun shines. May.

A. viridella, Scop.—Common flying about four o'clock p.m. in Eastham wood. June. At other times of the day at rest on and under fern.

A. Degeerella, Linn.—I have met with this beautifnl long horn, in plenty, on Rainford moss fallows, near the wood.

FAMILY 3. HYPONOMEUTIDÆ, Sta.

Genus 1. SWAMMERDAMIA, Hub.

S. apicella, Don.—May be found in mixed hedges, especially where blackthorn grows. April and May.

S. griseocapitella, Sta.—In the birch and alder plantations on the moss at Rainford. June.

S. Cæsiella, Hub.—Not uncommon in thorn hedges at Claughton and Prenton. June.

S. Pyrella, Vill.—Thorn hedges general. May and August.

Genus 3. HYPONOMEUTA, Zell.

H. Padellus, Lin.—Thorn hedges around Upton. July.

H. Euonymellus, Scop.—Upon Euonymus Europœus in Claughton Park. July.

H. Padi, Zell.—Taken by Mr. Nixon at Hale, upon cherry trees.

Genus 6. PRAYS, Hub.

P. Curtisellus, Don.—Where ash trees grow. July.

FAMILY 4. PLUTELLIDÆ

Genus 2. PLUTELLA, Schr.

P. Cruciferarum, Zell.—A very common insect. May and September.

P. porrectella, Lin.—In my own and other gardens where white rock is grown, feeds in the flower buds. July.

P. Dalella, Sta.—May be beat and smoked out of gorse and heather bushes on Bidston hill in September.

Genus 3. CEROSTOMA, Lat.

C. radiatella, Don.—Croxteth woods. September.

C. costella, Fab.—Woods in September.

C. nemorella, Lin.—Bidston park wood, near where honeysuckle grows. August.

C. Xylostella, Lin.—Where honeysuckles grow in lanes. June.

FAMILY 5. GELECHIDÆ.

Genus 1. ORTHOTÆLIA, Step.

O. Sparganella, Wen.—In pits near Birkenhead where *Sparganium* grows. July—dusk.

Genus 2. SEMIOSCOPIS, Hub.

S. Avellanella, Hub.—Bidston park wood. April, upon tree trunks.

S. Steinkellneriana, W. V.—About Upton in mixed hedges, and upon Mountain ash at Bidston. April.

Genus 4. PHIBALOCERA, Step.

P. Quercana, Fab.—Eastham and other woods. July.

Genus 5. EXÆRETIA, Sta

E. Allisella, Sta.—Where Artemisia vulgaris grows. July.

Genus 6. DEPRESSARIA, Haw.

D. costosa, Haw.—Where broom and gorse grow. July.

D. liturella, W. V —Where Centaurea nigra grows. July.

D. Umbellana, Step.—Amongst gorse. August to April.

D assimilella, Treit.—Broad Green and Roby, on broom. July.

D. nanatella, Sta.—Under gorse bushes at New Brighton in August. Evening.

D. atomella, W. V.—Bidston marsh where Genista tinctoria grows. September.

D. arenella, W. V.—Everywhere.

D. propinquella, Treit.—Sand hills on the coasts. August.

D. subpropinquella, Sta.—With propinquella.

D. Alstrœmeriana, Clerck.—With nanatella.

D. purpurea, Haw.—At Prenton and on the sand hills. August to April.

D. Hypericella, Hub.—Childwall, where Hypericum perforatum grows. July.

D. conterminella, Zell. In the plantations at Wallasey where willows grow. Comes freely to sugar. July.

D. Angelicella, Hub.—On Bidston marsh amongst Angelica sylvestris. July.

D. Carduella, Hub.—Sand hills near Leasowe castle. September.

D. ocellana, Fab.—Amongst mixed hedges where sallows grow. April.

D. Yeatiana, Fab.—Sand hills from New Brighton to Leasowe; under banks. August.

D. applana, Fab.—Everywhere where umbelliferæ grow.

D. ciliella, Sta.—Plentiful around Bidston and Upton, especially in lanes. April.

D. rotundella, Doug.—Leasowe sand hills, where sea-holly grows. August.

D. Pimpinellæ, Zell.—I took a single specimen of this species in August, 1850, on the hill above New Brighton. Near where the gorse grows, search.

D. albipunctella, Hub.—Amongst Pimpernel; Wallasey, near the mill, and at Hightown. August.

D. pulcherimella, Sta.—Jackson's wood and Upton; and on the waste lands between there and Bidston. By smoking. August, September.

D. Douglasella, Sta.—A scarce species. Crosby sand hills. August. Only four specimens yet taken.

D. Weirella, Sta.—I have met with several of this species by smoking, where Anthriscus sylvestris grows. Early in August.

D. Chærophylli, Zell.—Prenton and Woolton, near farm houses and dirty gardens. August.

D.——————?—A species not yet determined, taken on the waste land at Wallasey amongst blackthorn bushes.

D. Badiella, Hub.—On waste lands throughout the district. September.

D. Pastinacella, Dup.—Stourton and West Kirby by beating hay and grain stacks. September.

D. Heracliana, De G.—Wallasey mill and district around. August, September and April.

Genus 8. GELECHIA, Zell.

G. cinerella, Lin.—Road side between Poulton and Wallasey. July.

G. rufescens, Haw.—Road sides and clay banks on the coast. July.

G. Populella, Lin.—On the sand hills amongst the small sallows. July.

G. temerella.—On the sand hills at Crosby, amongst the small sallows.

G. lentiginosella, Tis.—First discovered by Mr. Almond feeding upon the Dyer's weed, on Bidston marsh; the locality pointed out to me by him, a dry bank.

G. fumatella, Doug.—This species still remains local on our sand hills; it is taken between Wallasey and Leasowe about the middle of the hills. July.

G. ericetella, Hub.—Plentiful upon Bidston hill in June and July.

G. mulinella, Tis.—Wherever gorse is found. July.

G. sororculella, Hub.—Amongst the small sallows on the sand hills; comes to sugar. July.

G. longicornis, Curt.—Confined to the mosses, where it may be taken on the wing in May, or may be smoked out of bushes of heath.

G. diffinis, Haw.—Bidston hill, not abundant; on the mosses in profusion. June, July, August.

G. terrella, W. V.—Everywhere. July.

G. desertella, Edl.—On the sand hills all summer.

G. Artemisiella, Tish.—Plentiful among wild thyme on the sand hills in July.

G. senectella, Fv. R.—With artemisiella. July and August.

G. mundella, Dougl.—Sand hills on the coast under overhanging banks. May.

G. affinis, Haw.—On moss covered walls. July.

G. quadripunctella, Haw.—In profusion on the sand hills with mundella, through the summer.

G. domestica, Haw.—Old walls and old hedge cops where wiry grass *(Festuca)* grows.

G. proximella, Hub.—Plentiful around the mosses in May and June, generally sitting upon alder tree trunks.

G. vulgella, Hub.—In hawthorn hedges. July.

G. fugitivella, Zell.—May be beat out from Croxteth hall to Wright's farm, and upon the trunks of trees in Croxteth wood.

G. Æthiops, West.—Plentiful upon the mosses, especially where they have been burnt, sitting upon the scorched places.

G. distinctella, Zell.—Hitherto a scarce species. I have taken a few in the centre part of the Wallasey sand hills. August.

G. celerella, Doug.—Leasowe sand hills, under banks in September. I cannot find out the habits of this species. Its flight is exceedingly rapid.

G. costella, St.—A single specimen is all I have met with, beat from Solanum dulcamara; Olive Mount. July.

G. maculea, Haw.—Not uncommon near gardens in Wirral in the hedges. June.

G. tricolorella, Haw.—In the same place as maculea, but generally a few weeks later among Stellaria holostea.

G. fraternella, Dougl.—In hedge banks, where Stellaria uliginosa grows. Prenton, &c.

G. maculiferella, Mann.—A single specimen in my cabinet is all I have seen, and I have no record of its capture.

G. marmorea, Haw.—Abundant on the sand hills from May to October.

G. dodecella, Lin.—Wherever Scotch firs grow (Pinus sylvestris). July.

G. triparella, Zell.—On the fallows around mosses. May.

G. tenebrella, Hub.—Botanic gardens, on the lawn opposite the green houses. W. Skellam. June.

G. tenebrosella, F.v.R.—Only four specimens taken; they are in poor condition. July. Liscard.

G. ligulella, Zell.—First taken by Mr. Edmondson at New Brighton, July. It is not uncommon where Lotus corniculatus grows, in June and July.

G. anthyllidella, Hub.—Plentiful, but somewhat local, on the sand hills near the hotel, New Brighton. May, August, September.

G. lucidella, Steph.—In the parish pit, near Hose farm, Liscard; and in the old clay pits on the road side near Tue Brook—discovered, in the last place, by Mr. N. Cooke, 1855. July.

G. cerealella, Oliv.—Feeds in grain warehouses, bred from Indian corn and wheat—may be found under window sills and door heads in streets where grain is stored. July, August.

G. nigricostella, F.v.R.—I have only met with three specimens of this species, Bidston marsh and Hale marsh. July.

G. nœviferella, Zell.—Church road, Stanley, and at Prenton; not abundant. Summer.

G. Hermannella, Fab.—Taken by Mr. Warrington behind Tranmere hall, in the stack yard. Feeds upon Chenopodium.

G. pictella, Zell.—Near the mouth of the Alt, at Hightown. August. Amongst the herbage.

G. ericinella, Dup.—Where heath grows. Summer.

Genus 9. PARASIA, Dup.

P. lappella, Lin.—May be found in July near Hose farm, and upon the clay banks at Egremont.

Genus 11. CHELARIA, Haw.

C. Hubnerella, Don.—Walker's lane, Tranmere, and in other mixed hedges. August.

Genus 12. ANARSIA, Zell.

A. Spartiella, Schr.—Gorse bushes above New Brighton, and in Wallasey lane. July.

Genus 16. SOPHRONIA, Hub.

S. parenthesella, Lin.—Beat out of gorse in Jackson's wood, where the new college now stands. July.

Genus 17. PLEUROTA, Hub.

P. bicostella.—Heaths. May and June.

Genus 18. HARPELLA, Sch.

H Geoffrella, Lin.—The specimens in my cabinet I took in the lane near the old mill dam at Garston many years ago, and have never seen any other specimens taken in this district I have heard it asserted, that it never occurred north of London. My specimens prove the contrary. Stainton says,—"it delights to fly in the early morning, preferring sunny mornings."

Genus 20. DASYCERA, Sta.

D. sulphurella, Fab.—Wherever there are old decayed trees or posts with the bark on. April, May.

Genus 21. ŒCOPHORA, Zell.

Œ flavimaculella, Sta —Where Angelica sylvestris grows. June, July, August.

Œ. tripuncta, Haw.—In old bramble hedges. June. Oxton.

Œ. subaquillea, Edl.—Bred from a pupa found under loose gorse bark; beat out of old gorse bushes at Jackson's wood and Bidston. June.

Œ. fuscescens, Haw.—Old gorse bushes on the top of Bidston hill. September.

Œ. pseudo spretella, Sta.—Plentiful in grain warehouses, particularly so in Golding's, North John street.

Genus 23. ENDROSIS, Hub.

E. fenestrella, Sco.—The common clothes moth.

Genus 24. BUTALIS, Treit.

B. grandipennis, Haw.—Mr. Brockholes first called my attention to some fine webs in the gorse bushes upon Bidston hill, where I had taken this species for some years. We bred the insect from the larvæ in the webs. June.

B. senescens, Sta.—Bidston hill. July. Among short grass.

FAMILY 6. GLYPHIPTERYGIDÆ.

Genus 1. ACROLEPIA, Curt.

A. granitella.—Mixed hedges, Liscard, near the Trafalgar hotel. Mr. Edmondson. Two specimens.

Genus 3. GLYPHIPTERYX, Hub.

G. fuscoviridella, Haw.—Among low herbage in damp places, on the sand hills. June.

G. Thrasonella, Scop.—Where rushes grow. June.

G. Hawarthana, Steph.—Among the cotton grass on the mosses in May. Feeds in the seed pods.

G. equitella, Scop.—Where Sedum acre grows, as on the old walls at Wallasey, near the Church. June.

G. Fischeriella, Zell.—In most mixed hedges in old lanes among flowers. May, June.

Genus 5. PERITTIA, Sta.

P. obscurepunctella, Sta.—I have only met with two specimens, one in Edge lane, and I have no record of the other. June.

Genus 6. TINAGMA, Dup.

T. sericiellum, Haw.—Old lanes among flowers. May.

FAMILY 7. ARGYRESTHIDÆ.

Genus 1. ARGYRESTHIA, Hub.

A. nitidella, Fab —In most thorn hedges. June.

A. semitestacella, Curt.—Croxteth park, where the beeches grow, near the charcoal burners' hut. September.

A. spiniella, Zell.—Bidston hill, and Simonswood, on mountain ash. August.

A albistria, Haw.—On the waste land between Hose side and Wallasey village among sloe trees. June.

A. conjugella, Zell.—Where mountain ash grows. June and July.

A. glaucinella, Zell.—A collector of insects showed me some specimens of this species he had taken in this district, but did not tell me where he took them. The most likely place to find them would be on the old oak tree, near the stile, on the foot walk between Bromborough and Eastham wood. Search low down the trunk. June and July.

A. retinella, Zell.—In birch plantations, near the mosses. July.

A. pygmæella, Hub.—Among sallows, in June and July.

A. curvella, Lin —Upon apple trees in orchards at Frankby, Bromborough, &c. June.

A. Sorbiella, Treit.—Beat from the row of mountain ash, in the last field before you get to the moss, going by Knowsley chapel road.

A. Goedartella, Lin.—Where old birches grow. July.

A. Brockeella, Hub.—Taken with Goedartella.

Genus 2. CEDESLIS, Sta.

C. farinatella, Zell.—Bidston hill, on the Upton road, among the young fir trees. June.

Genus 3. OCHEROSTOMA, Zell.

O. piniariella, Zell.—Where fir trees grow. Summer.

FAMILY 8. GRACILLARIDÆ.

Genus 1. GRACILLARIA, Zell.

G. Swederella, Sch.—Plentiful where oaks grow. Summer.

G. stigmatella, Fab.—May be found among the small sallows on the sand hills, in Autumn and in Spring. Comes to sugar.

G. elongella, Lin.—May be beat from the silver firs, in Croxteth park, in Winter and Spring.

G. Syringella, Fab.—Wherever lilacs grow. May.

G. phasianipennella, Hub.—I smoked a single specimen of this species out of a tuft of heath in the lane above Jackson's wood, October, 1854. Should occur among Polygonum hydropiper.

G. auroguttella, Step.—In the lane leading from Broad Green toll bar to Woolton, among Hypericum. July.

Genus 2. CORISCIUM, Zell.

C. sulphurellum, Haw.—Boors Wood, Hale, is the only place I have met with this pretty insect in our district. August.

Genus 3. ORNIX, Zell.

O. Avellanella, Sta.—Croxteth wood and Prenton lane, where nut bushes grow. Spring and Autumn.

O. Anglicella, Sta.—Old hedges in lanes; anywhere. May, July.

O. Loganella, Sta.—Beat from mountain ash at Simonswood, in June.

O. guttea.—Bred from apple leaves collected at Bidston and Moreton. June. Larvæ feed in August.

O. Betulæ, Sta.—Young birches on the moss. May.

FAMILY 9. COLEOPHORIDÆ.

Genus 1. COLEOPHORA.

C. Fabriciella, Vill.—In a small flowery field between Bidston pleasure ground and the marsh. June.

C. alcyonipennella, Koll.—On the Railway bank at Olive Mount; and Mrs. Almond found it in the old lane, Clifton park, feeding upon Centaurea nigra.

C pyrrhulipennella, Tisch.—On Bidston hill, and upon the mosses. June.

C. albicosta, Haw.—Among gorse at New Brighton, Bidston, &c. May and June.

C. affirmatella, N.S.—Expands from six to eight lines. Head and face white, antennæ whitish, annulated with dark rings, the basal joints tufted with very long whitish hair-like scales, darkest at the ends. The fore wings white, powdered with numerous fuscous scales, more thickly spread towards the apex, cilia light ashy; hind wings light ashy, with lighter cilia. Plentiful upon "Salix caprea" growing upon the clay banks at New Ferry and around Flaybrick hill. The pistol-like case resembles bird dung upon the leaf, and has been frequently overlooked in consequence. Larvæ, May and June; Imago in July.

C—— ?—New species. Crosby sand hills. June and July.

C. discordella, Zell.—Plentiful among Lotus corniculatus on Crosby sand hills.

C. cæspititiella, Zell.—Among the rushes upon Bidston hill, in June.

C. annulatella, Nyl.—I have met with the case of this species in Church road, Stanley, but have not yet bred it.

C. ——— N. S. ?—This species is allied to nigricella, and feeds upon birch, in May.

C. nigricella, Step.—Plentiful in old thorn hedges. July.

C. fuscedinella, Zell.—Where alders grow, always plentiful. July.

C. juncicolella, Sta.—Bidston hill. July.

C. gryphipennella, Bouché.—Where roses grow. June.

C. Laricella, Hub.—Where larches grow. June.

C. viminetella v Heyd.—On sallows in the lane leading from Mosley hill to Allerton; also on the sweet gale on Simonswood moss. Is this the same species?

C. lutipennella, Zell.—Eastham wood. June.

C. ochrea, Haw.—Upton and Moreton. July.

Family 10. Elachistidæ.

Genus 4. Batrachedra, Sta.

B. præangusta, Haw.—Upon the trunks of the white poplars which grow on the sand hills between Crosby and Hightown station. End of June.

Genus 7. Laverna, Curt.

L. propinquilla, Sta.—Mixed hedges, Prenton. July. Very few taken.

L. lacteella, Steph.—Walker's lane, Tranmere, first taken by Mr. Diggles. June.

L. atra, Haw.—In mixed hedges near gardens. June and July

L. ochracella, Curt.—Bidston marsh, among Epilobium hirsutum. July.

Genus 8. CHRYSOCLISTA.

C. flavicaput, Haw.—In the thorn hedges in the Botanic gardens. June.

C. Schrankella, Hub.—Where Epilobium grows. July.

Genus 13. ELACHISTA, Treit.

E. apicipunctella, Sta.—I took my specimens on the fallows at Simonswood moss, July, 1850. June is said to be the proper time for it. Feeds in the stems of grass.

E. albifrontella, Hub.—Abundant under hedges in sheltered places.

E. atricomella, Sta.—I have only taken one specimen. Search where Dactylis glomerata grows.

E. luticomella, Zell.—Bred freely from Dactylis glomerata, previously considered very rare. June.

E. Kilmunella, Sta.—Prenton hill and Kirkby Moss. July.

E. nigrella, Hub.—Common under hedges, in May.

E. pulchella, Haw.—Plentiful among the grass patches on the sand hills, in May and August.

E. Megerlella, Sta.—Mr. Edmondson took this species somewhere between Seacombe and Liscard.

E. cerusella, Hub.—Plentiful in wet parts of the mosses. May and August.

E. rhyncosporella, Sta.—Abounds among the cotton grass on mosses.

E. biatomella, Sta.—Bidston hill and New Brighton hill, in grassy places under gorse bushes. May and June.

E. triatomea, Haw.—With the former.

E. colletella, F.v R.—I have two specimens, but have no record in my Journal where I took them.

E. ochreella, Sta.? *Nebulea*, Sta.?—Jackson's wood and Bidston wood. June.

E. cygnipennella, Hub.—On all waste lands.

E. Gregsoni, Sta.—On the cinder walk from Edge lane to Church road, Stanley. End of March, April.

Genus 14. TISCHERIA, Zell.

T. complanella, Hub.—Where oaks grow. June.

T. marginea, Haw.—Flavbrick hill, Patrick wood, and lanes where old brambles grow. April and May.

FAMILY 11. LITHOCOLLETIDÆ.

Genus 1. LITHOCOLLETIS, Zell.

L. quinqueguttella, Sta.—Among the small sallows on the sand hills. May and July.

L. pomifoliella, Zell.—Where crab trees grow in lanes. May and August.

L.——————?—In lanes, on thorn hedges plentiful.

L. coryli, V. N.—Prenton lane, among nut bushes. May.

L. spinicolella, Kol.—On the waste ground near Hose Side, behind New Brighton. May, August.

L. faginella, Mon.—Wherever you can find beech hedges. May, August.

L. salicolella, Sircom.—May be bred, or beat from, sallows, especially Salix caprea. April, August.

L. viminetorum, Sta.—Where osiers grow. May and August.

L. ulmifoliella, Hub.—Croxteth park, near the charcoal burners' hut. Spring and August.

L. spinolella, Dup.—In the large sallow bush inside the moss wood on the road side. May.

L. quercifoliella, F.v.R.—Where oaks grow. May, August.

L. Messaniella, Zell.—Aigburth road and Edge lane, in and near evergreen oaks. April, August.

L. corylifoliella, Haw.—Thorn hedges, around Olive Mount. May.

L. ulicicolella, Vaugh.—Furze bushes on the waste lands betweeen Poulton-cum-Seacombe and Wallasey. July.

L. alnifoliella.—In profusion in the plantations between Hightown station and Formby, on the alders. End of June.

L. Cramerella, Fab.—Plentiful in oak woods. April.

L. emberizæpennella.—Eastham and Hale woods, among honeysuckles. May.

L. Frolichiella, Zell.—Among the alders beyond Huyton quarry. May.

L. Dunningiella, Sta.—Lord Sefton's plantations at Croxteth, among the nut trees. May, and again in Autumn.

L. Nicellii, Zel.—Croxteth park plantations. May and August.

L. Stettinensis, von Nice.—I found the peculiar mine, as described to me by Mr. Wing, of this species, last July, in the alders growing near Formby.

L. Klemannella, Fab.—Also feeds in the same trees.

L. tristrigella, Haw.—Around Prescot and Upton, mixed hedges. May and August.

L. trifasciella, Haw.—In woods and old hedges where honeysuckle is plentiful. May, July.

Family 12. Lyonetidæ.

Genus 1. Lyonetia, Hub.

L. Clerkella, Lin.—Near old orchards and gardens. June.

Genus 2. PHYLLOCNISTES, Zell.

P. suffusella, Zell.—Near poplars at Club moor. End of June.

Genus 3. CEMIOSTOMA, Zell.

C. spartifoliella, Hub.—Among broom at Claughton and at Bidston. End of June.

C. Laburnella, Von Heyd.—This must be searched for where laburnums are plentiful. I took its larvæ in Cunningham's nursery, but did not breed the insect.—Makes a light green blotch on the laburnum leaves, in Autumn.

C. scitella, Zell.—This beautiful little thing may be found in Pigue lane, and elsewhere, by beating hedges, in June.

Genus 4. OPOSTEGA, Zell.

O. crepusculella, F.v.R.—My cabinet specimens were taken in the field below the long plantation at Bidston, on the wing. Evening, among long grass. July.

Genus 5. BUCCULATRIX.

B. Cratægi, Zell.—Mosley hill and Olive mount, old thorn hedges. June.

FAMILY 13. NEPTICULIDÆ.

Genus 1. NEPTICULA, Zell.

N. anomalella, Goeze.—Among roses in gardens and lanes. Spring and Autumn.

N. pygmæella, Haw.—In lanes. Evening. Spring and Autumn.

N. ruficapitella, Haw.—The lane from Bromborough to Eastham wood seems to be a favorite resort of this species, on oak trunks.

N. atricapitella, Haw.—Croxteth plantation. Spring and Autumn; on oaks.

N. floslactella, Haw.—Plentiful in June, in Prenton lane, and other places where nut trees grow, in hedges. May.

N. aurella, Fab.—Plentiful where brambles grow: in sheltered situations. All Summer.

N. pygmæella, Haw.—Pigue lane, Olive mount, in the hedges.

I am at present working at this genus, which is not in a satisfactory state, and will require some time to work out.

FAMILY 1. PTEROPHORIDÆ.

Genus PTEROPHORUS.

P. ochrodactylus, Hub.—Hale, Bromborough pool, above the mill, and on the banks of the Alt. In July and August.

P. trigonodactylus, Haw.—Waste land where coltsfoot grows. August and September.

P. acanthodactylus.—Hale marsh, particularly on the banks where ononis arvensis grows.

P. punctidactylus, Haw.—My specimen was taken by Mr. Nixon upon the window curtains in his house at Hale, June 21st, 1842. Jacksonwood.

P. fuscus, Retz.—Lanes near Warbrick moor. July.

P. bipunctidactylus, Haw.—Plentiful behind the New Brighton hotel. July. Evening.

P. pentadactylus, Lin.—Walker's lane, Tranmere, and other old lanes, plentiful.

In conclusion, I would call the attention of my fellow-labourers to the fact, that I took a plume, new to Britain, at Southport, in August last *P. (loewii*, Zell*)*. This is a few miles outside our district; but as the species has never been taken between Southport and Italy and the Isle of Rhodes, it will be interesting to know if it is within our district. I suspect it feeds upon garden herbs, perhaps hyssop or rue; and has probably been overlooked.

Genus ALUCITINA.

A. plolydactyla, Hub.—Plentiful in old thatch, especially near woods. Autumn and Spring. Must be beat out.

FINIS.

NOTE.—*Genus* HELIOTHIS.

H. armigera.—Captured by Mr. Almond at Bromborough, October 13th, 1857. The late appearance of this specimen must not be taken as a guide by those who wish to capture the species; rather let them search for it in August and September. I have known one taken in July.

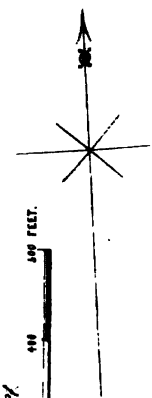
PROFILE OF THE ROCK SAKHRA IN THE MOSQUE OF OMAR:

ACCORDING TO ALI BEY.

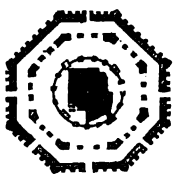
ACCORDING TO MR CATHERWOOD.

THE VALLEY OF THE KEDRON.

Void space at the time of the Second Temple, presumed to be a Cemetery of the Jews, and called Golgotha.



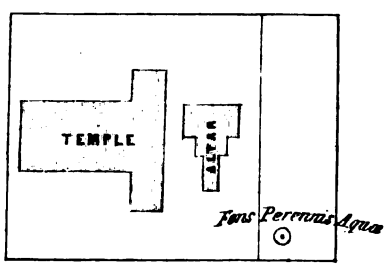
Supposed erection temp. Constantine 338.



Scale of Feet.

100 200 300 400 500 FEET.

Old Wall and present boundary of El Haram.



SOLOMON'S PORCH.

Old Wall still remaining.

Ruins of old vaults, temp. Justin

Present Site of the Mosque El Aksa.

Herod's Stoa Basilica.

Direction of Walls, supposed, Temple of Solomon.

The Watergate.

SHEW THE PRESUMED SITE OF THE SECOND TEMPLE ON PART OF THE PLATFORM OF SOLOMON'S TEMPLE ADAPTED

EL SAKHRA.

By Major-General the Hon. Sir Edward Cust, D.C.L., &c., President.

(Read 6th May, 1858.)

Modern travellers relate a discovery which appears to be but little known, of the Sakhra, or locked-up stone in the Mosque of Omar, on the site of the ancient Temple of Jerusalem.

Mr. A. P. Stanley, in his most interesting tour to the Holy Land, alludes to the stone El Sakhra and to the fountains, which will also be seen to have some reference to the subject of our enquiry. He mentions, moreover, that Burckhardt, the celebrated Sheik Ibrahim, had entered the grotto below the stone. But Ali Bey was the first person, (in his Travels to the Holy Land,) to describe the Mosque of Omar, and to give sections and drawings of it, which had up to that time been refused to the whole Christian world during the long period of its appropriation to the religion of Mahomet.

The authorities on which we are to rely for all that is known of this stone are first, Ali Bey's Travels, published in 1807, and secondly, Ferguson's Essay, founded on the report and measurements of Mr. Catherwood, introduced into Bartlett's "Walks about Jerusalem," 1844. These two writers were enabled to visit both the rock and the chamber under it, with every detail. The first begins his relation thus:—"As no detailed de-"scription has been hitherto given of the Mussulman Temple at Jerusalem, "because the Moslems are not prepared for such a task, and the Christians "are not permitted to enter it, I shall now endeavour to give some idea of "this magnificent monument of architecture, which ought to interest the "learned, whether followers of Moses, or Jesus Christ, or Mohammed." He seems to have been a man patronised by Sir Joseph Banks in his enquiries at the two Kaabas of Mecca and Jerusalem; and what he has stated is fully corroborated, in respect to the stone and dome of the rock, by Mr. Catherwood, an artist sent out by Burwood to make drawings for a panorama of the Mosque of Omar; and the plans and sections of both agree together.

Thirdly, Curzon, in his "Visit to the Levant," relates of the Mosque—"In the centre of the garden, which stands on the site of the ancient "Temple, is a platform of stone about 600 feet square, on which

"stands the octagonal building of the Mosque itself, the upper part "covered with green porcelain tiles, &c. The building is called the *Achsa* "*el Sakhra*, from its containing a piece of rock called the *Kadjr el Sakhra*, "or the locked-up stone, which is the principal object of veneration in the "place. It occupies the centre of the Mosque, and on it are shewn the "prints of the angel Gabriel's fingers, who brought it from heaven; and "the mark of the Prophet's foot, and that of his camel, when he went up "to heaven, &c. * * * We are told that the stone *el Sakhra* fell "from heaven at the time when prophecy commenced at Jerusalem—that "it was employed as a seat by the venerable men to whom that gift was "communicated; and that as long as the spirit of vaticination continued "to enlighten their minds, the slab remained steady for their accommoda-"tion, but that no sooner was the power of prophecy withdrawn, and the "persecuted seers compelled to flee for safety to other lands, than the stone "manifested the profoundest sympathy in their fate, and evinced a deter-"mination to accompany them in their flight; on which Gabriel the arch-"angel interposed his authority, and prevented the departure of the "prophetical chair. He grasped it with his mighty hand, and nailed it to "its rocky bed by seven brass or golden nails. When any event of great "importance to the world takes place, one of these nails disappears; and "when they are all gone, the day of judgment will come. As there are "only three left, the Mahomedans believe that the end of all things is not "far distant."

Fourthly, Richardson thus describes the same stone:—"But that to which "the Temple owes both its name and existence is a large irregular oblong "mass of stone, that occupies the centre of the Mosque. It is a mass of "compact limestone, the same as that of the rock on which the city stands, "and of the other mountains about Jerusalem, and if it had not been "called a separate stone, I should have imagined it a part of the native "rock that had been left unremoved, when the other parts were worked "down, or built up, for the foundation of the building. It rises highest "towards the south-west corner, and falls abruptly at the end where are the "prints of the prophet's foot. It is irregular on the upper surface—"under it there is an apartment dug in the solid rock, which is entered by a "stair that opens to the south-east. Into this excavation, however, I could "never gain admittance, though I was four times in the Mosque: the key "was always wanting. I was assured by Ali Bey, who as a Mussulman "had visited this excavation, (and who is the first person that has brought "it into Christian notice,) that it is an irregular square of about 18 feet "in circuit and 8 feet high in the middle. The entire Mosque stands on "a platform elevated 12 or 14 feet above the level of the grassy court—"the central compartment that contains the stone is elevated about 3 feet

"above this outer floor. There are four large square columns, and three "small round columns between each of them, which support the dome. "Between these there is in one place a high square wooden box, with an "opening on one side of it large enough to admit the hand to feel the "print of Mahomet's foot which he left there. I put in my hand and "touched it, and stroked my face and beard as I saw the Mussulmans do; "but it is so completely covered that it cannot be seen. I also introduced "my hand through the posts of the wooden rail to feel as well as to see "the marks of the angel Gabriel's fingers, into which I carefully put my "own." The story is then related in the same words as are used by Curzon in the extract given already.

Both the Bible history and Josephus are silent as to the existence of any such stone.

Josephus records that before the holy place "stood the altar, 15 cubits "high, and equal both in length and breadth, 40 cubits. The figure it was "built in was a square, and it had corners like horns, and the passage up "to it was by an insensible acclivity. It was formed without any iron tool, "nor did any such iron tool so much as touch it at any time;" and again he mentions, about the middle of the temple, "a square altar not made of "hewn stone."

The cubit has been taken at "three hand-breadths of six inches," or 18 inches. Consequently, the altar was 60 feet square, and stood 22½ feet high! but what did the height measure from? The top of the Sakhra would appear to be about 17 feet above the grassy court of the enclosure.

The compass of the floor of Moriah was increased by the industry of Solomon far beyond what it was when that great King first began the building there. The spot where David, by divine direction, built an altar, and God, by divine fire upon it, fixed the place for the altar of the Temple (1 Chron. xxi. 18, xxii. 1,) became the standing mark from whence the rest of the Temple was builded. This stood upon an immense substructure from the valleyside north, south and west, carried all round to the extent of one furlong square. In 2 Chron. iv. it is stated that Solomon made an altar 20 cubits square and 10 cubits high, or 30 feet square by 15 feet high; but whether it was of the fashion of that of Moses, than which it was four times as large; whether the middle space was hollow, or it had a grated hearth, like his; or what was the manner of ascending to it, is not certainly known.

The sacrifices of Solomon are exceeding wonderful: 700 oxen and 7000

sheep, (2 Chron. xv. 2,) and in 1 Kings viii. 63, "Solomon offered a sacrifice of peace offerings which he offered to the Lord, 22,000 oxen and 120,000 sheep." It may be respectfully enquired, how could this have been done on an altar of any size, even though the sacrifice itself may have continued for the longest period of such solemnities, or fourteen days?

But it is said that Solomon hallowed the middle of the court, "because the brazen altar that was before the Lord was too little to receive them;" and although some doubts exist as to the meaning of this phrase, "the middle of the court," it is understood that in consideration of the vast and infinite number of sacrifices to be slain and offered, he hallowed the court all about the altar for the purpose. Now, the height of the altar is given as ten cubits, or fifteen feet. Obviously, it was impossible for the priests, when the altar was so high, to stand on the ground and serve upon it; and they were expressly prohibited (Exod. xx. 26,) from going up to the altar by steps; therefore there was a gentle rising called *Kebesh*, which may be Englished, "the rise of the altar."

A right understanding of the form of the altar, and of this rising up to it, is not very easy to arrive at. Ezekiel the prophet records respecting its place, "upon the top of the mountain the whole limit thereof round about shall be most holy." On this rocky top we may then suppose that there was placed, on a low brass settle forty-seven feet square, and not above a cubit in height, an altar about eighteen feet square, and a few feet high, having a horn at each of the four corners. Between the settle and the altar the priests would have been able to move to sprinkle the blood of the sacrifices; at the south-west point of the stone were two holes near to the angle's point, one upon the west side and one upon the south, into which the blood that was poured upon the foundation did run, and so into a sink or common sewer under ground, which emptied itself into the valley of Kedron; and we shall find that one of the accounts of the Sakhra states that it is pierced by a considerable perforation at the south-east angle, communicating quite through to the cavern beneath, which might have been a natural conduit to carry off the blood and offal, which from thence was brought down through a vertical channel now covered with a marble slab and the golden nails mentioned by Curzon.

It may be also mentioned that the mouth of the ancient sewer has been found recently on the hill-side above the fountain of the Virgin; and this subterranean passage has been identified as the canal mentioned by

Benjamin of Tudela as the termination of the drain of the great altar where the sacrifices were slaughtered in ancient times. It was through this passage that the *Fellardin* are said to have effected their entrance into the city under Ibrahim Pacha, emerging near the west wall of El Haràm.

Thus, having stated all that seems to be attainable on the subject of the stone Sakhra and the altar of the Temple, we may perhaps arrive at these conclusions:—

1. A block of calcareous stone, sixty feet square, and several feet in thickness, cannot have been conveyed thither in one rough, unhewn mass by any mechanical contrivance known to the Jews, or any other people.
2. The Sakhra must therefore have always been on the spot where it is now to be seen.
3. The mountain Moriah was certainly the same whereon Abraham offered his son Isaac, and where the temple was afterwards built by Solomon.
4. The stone Sakhra must therefore have formed part of Moriah, and must have been in the precincts of the Temple.
5. The place of the threshing floor of Araunah, the Jebusite, was a property purchased by David on some part of Moriah; and "David built there an altar unto the Lord, and offered burnt offerings and peace-offerings, and called upon the Lord; and He answered him from heaven by fire upon the altar of burnt offering." (1 Chron. xxi., 26.) "Then David said, this is the house of the Lord God, and *this is the altar of the burnt offering for Israel.*"
6. The brazen altar made by Solomon "was not able to receive the burnt offerings, &c." "And he hallowed the middle of the Court, and there he offered burnt offerings." The space here indicated may have comprised the "insensible acclivity" mentioned by Josephus.
7. Solomon's altar was certainly removed from its place by King Ahaz, and is never mentioned in the history of the Second Temple.
8. The stone Sakhra may therefore be deemed the natural summit of one of the heights of Moriah, and to have been of itself an altar on

which the offerings were laid and offered up by the priests (an altar "formed without any iron tool"—"a square altar not made of hewn stone,") sometimes, however, with the addition of a brazen altar or brazier placed upon it.

9. That the cave below was the receptacle into which all the blood and offal and washings and cleansings and rakings and ashes were conveyed by means of the natural holes now existing, which have been objects of superstitious veneration to the infidels; and, the surface of the rock being uneven, there would have been a natural and constant drain into this receptacle, which had a connection of some kind, still existing, with the valley of Jehosaphat.

10. The rock Sakhra may be therefore regarded as God's own altar, on which the sacrifices of the chosen people were offered, from the first existence of the Temple, and where, in all probability, they continued to be offered till the end.

11. All the types of the great sacrifice were therefore offered continually on the stone Sakhra.

12. I find in "Williams's Holy City," that Professor Willis had arrived at the same conclusion; and had concluded also that the excavated chamber below it was the cesspool of the great altar, and the entrance to the canal through which the blood of the victims was carried off to the brook; he mentions, moreover, as a curious coincidence, that the Middoth places the entrance to this canal at the south-east horn of the altar, which is identically the same, according to the authority of all who have seen the spot, in which the entrance to the cave is found. He adds, "I cannot "doubt but that the pierced rock, venerated by the Jews and "mentioned by the Bordeaux Pilgrim, is the same with the "Sakhra of the Moslems, and that it marks the position, *not* of "the Holy of Holies, as the later Christian, Jewish, and Moslem "authors profess; but, as an earlier Christian tradition con-"sistently maintains, of the brazen altar before the porch." The Bordeaux Pilgrim, writing A.D. 333, saw two equestrian statues of Hadrian on the site of the Temple, and "*non longe de statuis,* "*lapis pertusus, ad quem veniunt Judæi singulis annis, et unguent* "*eum.*" St. Jerome, writing circa, A.D. 400, states that the statue stood "*in ipso sancto sanctorum loco.*"

But, quitting this part of the subject as pretty conclusive on the identity of the altar of sacrifice and the Sakhra, we must refer to what is known of the fountains.

On this hill two natural objects still remain, each of the greatest interest. High in the centre of the platform rises the same sacred rock, and a living spring of water proceeds from beneath the mighty vaults on which the platform rests.

Richardson mentions two fountains where "they washed their heads and tasted of the water," of one of which he says, "there is a beautiful fountain called the Orange fountain, from a clump of orange trees which grow near it." Both have some connection with the pool of Siloam, which lies south of the city outside the Watergate.

It was not a little water that was used and spent at the Temple for filling the lavers, boiling the offerings, washing the sacrifices and the court itself, filling the baths of the priests, &c. It was not a small supply that was sufficient for all these purposes, and yet the Temple never wanted, but always had water in great abundance. "There "was a constant supply," relates an eye-witness, "as if there had sprung "up an abundant fountain underneath. There were wonderful and in-"expressible receptacles underground, as appeared five furlongs' space "about the Temple, each one of which had divers pipes by which waters "came in on every side—all these were of lead underground and much "earth laid upon them. And there were many vents on the pavement, not "to be seen at all but by those that served, so that in a trice, and easily, all "the blood of the sacrifices could be washed away though it were ever so "much. And I will tell you how I came to know of these underground "receptacles:—they brought me out more than four furlongs' space out of "the city, and one of them bade me stoop down at a certain place and "listen what a noise the meeting of the waters made." This water is supposed to have been drawn from a spring-head which was called the fountain Elam, or from the great pools of Solomon, a short distance from Jerusalem.

Whatever difficulties have arisen about other matters, there can be no question that the mount on which the Mosque of Omar stands, has, from the time of David and Solomon, been regarded as the most sacred ground of Jerusalem.

The rock is one of the most venerated spots of Mussulman devotion—

the platform is called El Haràm, which signifies a Temple or place consecrated to the peculiar presence of the Divinity: the profane and the infidel are alike forbidden to enter it. The Moslem acknowledges but one other spot of equal sanctity: both are called El Haràm; the one is at Jerusalem, the other at Mecca. No Mussulman Governor, though he may give permission *to enter a mosque*, would dare allow an infidel to pass into the Kaabas at Mecca and Jerusalem—such a permission would be looked upon as a horrid sacrilege; it would not be respected by the people, and the intruder would become the victim of his imprudent boldness.

What can be the reason of all this sanctity in the eyes of the Mussulman? The early Christians regarded the Temple at Jerusalem with very different feelings, and used every effort to defile it. The Romans polluted it with a Temple dedicated to Venus; and it was not till A.D. 348–368, that any one gave it veneration. Then Constantine is said to have erected the Church over The Holy Sepulchre. For centuries it has been supposed that this is the church now called by the name of Calvary; but Dr. Clarke first, and Prof. Robinson since, have denounced the situation of the present "Church of the Holy Sepulchre" as certainly not upon the site "without the walls," which is a necessary condition to its being the Calvary of Scripture. Mr. James Ferguson, an architect,—induced to enter into the discussion by the statement and the plans and sections of Mr. Catherwood, who, by a curious accident, was enabled to make them by scale on the spot,—published his Essay in 1847, to shew two distinct things:

First, That by the measurements and details given of the second Temple by Josephus, it only stood on a small portion of the site of the Great Temple of Solomon, and that accordingly the stone Sakhra was wholly left out of the enclosure.

Secondly, That the Sakhra, thus "without the gate," was the true Sepulchre of Christ; and that, taking an architectural view of the Mosque which covers it, it is clearly no oriental building at all, but a temple or tomb of the date of the Roman Empire; and it is, in his belief, the actual building of Constantine, over what he also considered to be "the Holy Sepulchre."

In entering into the controversy, I must at once repudiate the idea, that

the vaulted cave under the Sakhra, which I believe to be the *Cloacum Maximum* of Solomon's altar, is "the new sepulchre in the garden, near "which Jesus was crucified, wherein was never man laid," (St. John xix, 41), but I am induced to avail myself of Mr. Ferguson's researches and conclusion to prove that the Sakhra is the spot on which the cross of Jesus Christ was raised, and on which expiation was made by his blood for the sins of the whole world—the self-same spot on which all former types of the atonement had been offered up.

There has never been any doubt raised that our blessed Lord, the great Antitype of all these sacrifices, "suffered without the gate," upon Mount Calvary, the site of which must still be considered uncertain. Under any circumstances, it was not more than a stone's throw to the westward of the Sakhra, but the proofs that type and antitype were sacrificed on the self same spot on which Isaac was offered, and on which the altar was hallowed by fire from heaven, remain to be established. When the Caliph Omar took Jerusalem, the spot had been abandoned by the Christians; but an Arabian historian relates that the Caliph applied to the Patriarch to learn what would be the most proper place on which to build a mosque, and he was conducted to what the Patriarch considered the ruins of Solomon's Temple. This as well as the other supposed sites of the events that had happened at Jerusalem, has been fixed by the Empress Helena on very insufficient evidence. Dr. Clarke supposes that an accidental fissure in the rock led the Empress to fix on the spot, now called Calvary, as the site of the crucifixion. The other selections were quite as vague; and there is nothing to determine even that of the Temple but the vast substructures and the remains of the wall upon the valley of the Kedron, which appear to indicate the general locality with some precision. Josephus, however, states the circumference of the city to have been thirty-three furlongs, or little more than four miles, which is nearly twice that of the modern town, so that what precise portion was the Temple or what the city cannot be positively ascertained. Certainly the silence of Hebrew history as to the existence of the stone Sakhra, if it really is the summit of the original Mount Moriah, and "the place of the threshing floor on which the fire of heaven fell," is very remarkable; while its recent discovery upon the site of the Temple, and its sanctity in the estimation of the Mahomedans, awaken in the Christian mind a desire to learn its true history. Whatever may be the papal fables as to

the Holy places, here is one unchanged natural feature of Jerusalem as yet unaccounted for.

According to some persons, there had been three Temples built in succession at Jerusalem; the first by David and Solomon, the second by Zerubbabel, and the third by Herod: but the Jewish scriptures acknowledge only two; and it is generally admitted that Herod's Temple, which took forty-five years to carry out, was merely an extension or beautifying of the then existing Temple. Now we know Cyrus sent away the children of the captivity with every material aid, to rebuild the city and Temple. But seventy years were gone since Nebuchadnezzar had swept his besom over the place; and, in addition to the ravages of the conqueror, "*tempus edax rerum*" must have made the task of a rebuilding no easy one. The work, though cheerfully begun, went on but slowly; so that it was twenty years before the new Temple was dedicated. Now whereas that of Solomon was 2500 feet square, the dimensions of the second Temple, as recorded by Josephus, did not exceed 600 feet. The present site of El Haràm is an irregular square, 1520 by 927 feet. It is well known, however, that both structures had been rectangular, because all the ancient Temples are found to have been so. In the Haràm the south-east angle alone is a rectangle. Mr. Ferguson believes that the one rectangular wall still existing was common to all the structures that have existed on Mount Moriah; we may not unreasonably conclude, therefore, that, when the children of the captivity returned and contemplated the vast ruin which had befallen the city and Temple, they would readily resolve to avail themselves of all the facilities that might be offered by existing remains to re-establish their worship, not more solicitous as to the precise localities of the former Temple than they shewed themselves to be regarding its extent. At the south-eastern angle they may have found reparable remains; and, within the dimensions to which they appear to have limited themselves, a living spring of water existed, an incident as essential for the sacrifice of their worship, as the fire, no longer celestial, that consumed the victims; this, therefore, may have induced them to place the sacrificial altar where they did, and not in the old locality.

The altar is but slightly mentioned after the dedication of the second Temple, and the sacrifices were probably never very large. It was plundered and wretchedly profaned by Antiochus Epiphanes, who caused

the public worship in it to cease, which it did until restored by Judas Maccabæus, when the altar was dedicated anew; and I am not aware that in the New Testament it is ever recorded that our Lord, though he did attend the feast of this dedication and the stated festivals, ever attended the sacrifices of the altar, though it is of course very reasonable to suppose he did so. Josephus merely records of the altar of burnt offering, that at the destruction of the Temple by Titus, an immense number of dead were found round about it.

From Constantine's time to the period when the Caliph Omar took possession of Jerusalem, which was in A.D. 636, nothing is recorded of the topography of the Temple. The Moslems remained in possession of all the Holy Places until 1099, when the Crusaders took the place by storm, and held it for 88 years until A.D. 1187. The Egyptian Sultan then became master of Jerusalem, and from that period, nearly seven centuries ago, the precincts of the Temple have been jealously guarded by the Mussulman power; thus the stone "Sakhra" remained concealed from every Christian eye, and almost from Christian knowledge, till the plans and descriptions of Ali Bey and Mr. Catherwood were given to our literature.

The site of the Golgotha of scripture is of course material to the conclusion it is my object to establish. The inference deduced by Mr. Ferguson is that the portion of Solomon's Temple *not* occupied by the second Temple would not have been profaned by dwelling-houses; that consequently there was every probability that it would become a cemetery of the Jews, —"the place of a skull;" and, being a void and desecrated spot, might have been selected, with great propriety, as a place for the execution of malefactors.

It is stated that the roof of the cave under the stone Sakhra is a natural irregular vault; and that, exactly in the middle of the room, there is an aperture, almost cylindrical, through the whole thickness of the roof, about three feet in diameter. Now, if it be granted that El Sakhra is the "unhewn stone" that formed the sacrificial stone and altar of Solomon, there is reason to believe that the aperture always existed in it; for it has been shewn that the blood and offal of the sacrifices were thus drained into the pool, and therefore this remarkable "aperture" is as old as the first Temple.

Thus, if my reasoning has been followed up, we shall find that the stone, rejected from the second Temple, was existing in the days of our Saviour in the very "Golgotha" of the New Testament; and here accordingly we discover a spot on which the cross of Christ could have been fixed by means of wedges—the "thieves on the right and left" being "on crosses away from the stone on either side," removed about fifteen feet apart. Accordingly, the position would be established:

That, by the forecast and guidance of the Almighty, the self-same silent witness—the natural rock and summit of Moriah—testifies to the offering up of Isaac—to the place of the threshing floor of Araunah the Jebusite—to the altar of sacrifice of David and Solomon—and the precious expiation of Christ upon the Cross.

If it be enquired, how should such a witness not be recognised by the Old Testament, or the New, or by Josephus? I can only reply that, "as no one knoweth of the grave of Moses to this day," so it may be concluded that the wisdom of God, who foresaw the puerilties, which are daily evidenced to our own eyes by the superstitions in an imaginary Calvary, mercifully hid the stone from the generations of both Jews and Christians till the fulness of time; but now we know that it exists, and must of necessity have existed all the while. And, the fact of its existence being at length established, it is hoped that it may be made a subject of enquiry, not to serve any religious or ecclesiastical purpose, but as we would investigate the uses of the Pyramids or Stonehenge. We may not irreverently enquire what this rock can have been that rises in the midst of the courts of the Temple at Jerusalem—a rough unseemly excrescence that successive ages of mighty sovereigns have spared, and which has been kept out of Christian sight so long by the superstitious agency of the Moslem. It must have to fulfil some mighty history in the very holy place where it is found.

ON THE FLORA OF PRESTON AND ITS NEIGHBOURHOOD.

By Mr. Charles Joseph Ashfield.

(Read 21st January, 1858.)

Salicornia herbacea, Linn.—Ashton marsh. Sea shore above Southport.

Hippuris vulgaris, Linn.—Plentifully in ditches between Rufford and Martin mere.

Callitriche verna, Linn.—Brook between the tram-road and Walton hall gardens, and in many other similar places about Preston.

Ligustrum vulgare, Linn.—By the side of the footpath by the Larches at Ashton, and in many other places about Preston.

Fraxinus excelsior, Linn.—Frequent in woods and hedges.

Veronica serpyllifolia, Linn.—In Walton hall gardens, by Rufford park wall, and plentifully in clover fields about Rufford. Frequent in pastures between the tram-road and Walton hall gardens.

—— *Beccabunga*, Linn.—Very common in brooks and ditches throughout the district.

—— *anagallis*, Linn.—In brooks and ditches in many places, but not so frequent as the last. Ditches between Kirkham and Freckleton, plentifully.

—— *scutellata*, Linn.—Brook between the tram-road and Walton hall gardens. Near Nicky Nook, Garstang; on Ribbleton moor.

—— *Chamædrys*, Linn.—Common on dry hedge banks throughout the district.

—— *officinalis*, Linn.—Occasionally in similar situations to the last; Ribbleton moor.

—— *montana*, Linn.—Woods about Redscar very plentifully; in the grounds belonging to Walton hall, abundantly.

—— *agrestis*, Linn.—Not uncommon in cultivated ground. In Walton hall gardens.

—— *polita*, Fries.—On a bank at Greave's Town, Ashton.

—— *arvensis*, Linn.—Frequent on walls and dry banks, and in fields. In Walton hall gardens.

—— *hederifolia*, Linn.—On a wall by the side of the road leading by Whinfield house to the Larches at Ashton. Not uncommon in similar places. Very abundant in dry corn fields about Rufford.

Pinguicula vulgaris, Linn.—Common in wet places on Pendle hill.

Utricularia vulgaris, Linn.—Brooks and ditches at Martin mere. I have been informed that this plant has been found in the canal near Preston, and in pits near Kirkham.

——— *minor*, Linn.—I have seen a dried specimen of this plant which was found on Leyland moss.

Lycopus Europæus, Linn.—Frequent by the sides of brooks and pits.

Circæa lutetiana, Linn.—Plentifully in Penwortham churchyard. Ditch by the side of the footpath leading from the tram-road to Walton hall gardens. In several shady lanes and woods about Preston.

Lemna trisulca, Linn.—Pit beyond the Tunbrook wood, and in similar situations occasionally. Pit near the cemetery.

—— *minor*, Linn.—Abundantly on the surface of ditches and pools.

—— *gibba*, Linn.—Ditches and pools on Ribbleton moor.

Anthoxanthum odoratum, Linn.—Plentifully in meadows and pastures.

Valeriana officinalis, Linn.—Frequently in marshy places and ditch sides. Abundantly in several places between the tram-road and Walton.

——— *dioica*, Linn.—Meadows near Cottam mill; near Nicky Nook.

Fedia olitoria, Vahl.—A weed in Walton hall gardens.

Iris Pseud-acorus, Linn.—Very frequent in marshy places. Abundantly near the footpath below Brockholes wood.

Scirpus cæspitosus, Sm.—On Longridge fell.

—— *lacustris*, Linn.—Not uncommon by the sides of rivers and pools. Abundant and fine by the side of Marton mere, near Blackpool.

—— *maritimus*, Linn.—River side at Naze point, and in many localities between that place and Lytham. Ashton marsh, near Whinfield house.

—— *sylvaticus*, Linn.—I am informed that this plant grows near Sion hill, Ribbleton.

Eleocharis palustris, Br.—Common on marshy ground and by pools.

Eriophorum vaginatum, Linn.—Common on Pendle hill; plentifully on the moors between Black Coppice and Rivington Pike.

—— *angustifolium*, Roth.—Common on Pendle hill; Ribbleton moor.

Montia fontana, Linn.—Spring by the side of the road from Cottam hall to the Chapel, and in many similar places about Preston.

Dipsacus sylvestris, Linn.—Between Greave's Town and the marsh.

Scabiosa succisa, Linn.—Abundant in many places about Longridge on the fell sides.

Knautia arvensis, Coult.—Common in the borders of corn-fields.

Sherardia arvensis, Linn.—Frequent in corn-fields; common in fields near Stydd church.

Asperula odorata, Linn.—Melling's wood, and in several other woods about Preston.

Galium uliginosum, Linn.—Frequent by the sides of brooks and pits.

—— *cruciatum*, Linn.—Frequent by hedges and road sides.

—— *palustre*, Linn.—Frequent in marshy ground and by brooks and pits.

—— *saxatile*, Linn.—On Ribbleton moor; in several places about Clitheroe. Dry banks and walls about Rufford towards Martin mere.

—— *Mollugo*, Linn.—Occasionally in hedges near Beacon fell.

—— *verum*, Linn.—Brook side at Fulwood. Not unfrequently in pastures about Preston.; banks between Naze Point and Lytham, plentifully.

—— *aparine*, Linn.—Common in most hedges in the district.

Plantago major, Linn.—Common in pastures and by road sides.

—— *maritima*, Linn.—Frequent in Lea marsh and in similar situations.

—— *media*, Linn.—In several places between Clitheroe and Pendle hill; not uncommon in fields about Preston.

—— *lanceolata*, Linn.—Common by road sides and in pastures throughout the district.

—— *Coronopus*, Linn.—Plentiful in dry places on Ashton marsh.

Sanguisorba officinalis, Linn.—Very common in some of the fields between Walton flats and the tram-road; also in fields at the back of the Bridge inn, Penwortham.

Cornus sanguinea, Linn.—Frequent in hedges about Elston and Fishwick, and various other places.

Paristaria officinalis, Linn.—Abundantly on Clitheroe castle.

Alchemilla vulgaris, Linn.—Not uncommon in pastures and by the side of brooks generally in the district, and abundant in some places. Plentiful in one of the fields between the tram-road and Walton flats.

—— *arvensis*, Sm.—Frequent in the borders of corn-fields. A common weed in some gardens.

Ilex Aquifolium, Linn.—Not uncommon in hedges and bushy places about Clitheroe and Longridge, apparently natural.

Potamogeton natans, Linn.—Frequent in pits.

—— *perfoliatus*, Linn.—In the canal above Preston.

—— *rufescens*, Schrad.—In several pits near the cemetery.

—— *densus*, Linn —Frequent in the canal above Preston. Ditch by the side of the tram-road.

—— *crispus*, Linn.—Canal near Preston.

—— *pusillus*, Linn.—I am told that this plant grows on Ashton marsh.

Sagina procumbens, Linn.—Frequent on walls and in dry gravelly places.

Sagina apetala, Linn.—In similar places to the last.

Myosotis palustris, "Kiphoff."—Very frequent in marshy places. Brook between the tram-road and Walton.

—— *collina*, Hoffm.—I am informed that this plant is to found among the sand hills at Lytham.

—— *cæspitosa*, Schultz.—Frequent in similar situations to Myosotis palustris.

—— *arvensis*, Hoffm.—Frequent in cultivated ground.

—— *sylvatica*, Hoffm.—Woods about Redscar.

—— *versicolor*, Lehm.—By the side of the Dow brook, below the camp at Kirkham.

Anchusa sempervirens, Linn.—At Rufford near the inn by the side of the road leading to the park, but perhaps not truly wild; also at Ribbleton, but doubtfully wild.

Cynoglossum officinale, Linn.—Very abundant on most of the sandhills between Lytham and Blackpool.

Symphytum officinale, Linn.—Ditch near Penwortham turnpike, and occasionally by the sides of brooks and ditches near Preston. On the quoiting ground at the public house by the North Union Railway bridge, Preston.

Lycopsis arvensis, Linn.—Occasionally in corn-fields, by road sides, and on rubbish heaps. On the beach at Lytham.

Primula vulgaris, Huds.—Very common in thickets, hedges and banks throughout the district.

—— *elatior*, With.—In the Tunbrook wood occasionally, and in pastures in the neighbourhood. In pastures near Greave's Town, Ashton.

—— *veris*, Linn.—Meadows and pastures. Pastures at the back of the Bridge inn, Penwortham, abundantly.

—— *farinosa*, Linn.—I am informed that this plant grows on Pendle hill, in similar places to the Pinguicula vulgaris.

Menyanthes trifoliata, Linn.—Very abundant in pools on Ribbleton moor, and in many similar places about Preston.

Hottonia palustris, Linn.—Ditches about Rufford towards Martin mere. I am told that it is also to be found in ditches about Lytham.

Lysimachia vulgaris, Linn.—By the side of the brook between the tram-road and Walton. By the side of Penwortham lodge.

—— *Nemorum*, Linn.—Frequent in woods in the neighbourhood. Woods about Redscar abundantly.

—— *Nummularia*, Linn.—Occasionally in wet meadows, especially along open drains and trenches.

Anagallis arvensis, Linn.—Frequent in the borders of corn-fields and in gardens. Abundant in corn-fields between Hesketh bank and Crossons.

Anagallis tenella, Linn.—Plentifully in marshy places between Lytham and the lighthouse. Wet hedge bank by the side of the road between Ormskirk and Halsall. About Nicky Nook abundantly.

Convolvulus sepium, Linn.—Plentifully in the hedge on the north side of the Ribble at Preston.

—— *arvensis*, Linn.—Borders of corn-fields and on dry banks.

—— *Soldanella*, Linn.—On the sea shore about a mile and a half from Blackpool towards Lytham.

Campanula rotundifolia, Linn.—Frequent on hedge banks and in dry pastures in every direction.

—— *latifolia*, Linn.—Ditch between the tram-road and the East Lancashire railway viaduct. Ditch by the side of the footpath leading from Penwortham bridge to Penwortham church, and several other similar places near Preston. In several places near the road from Longridge to Chipping. Holland wood, Walton-le-dale very abundant.

—— *hederacea*, Linn.—I am informed that this plant grows at Nicky Nook near Garstang.

Jasione montana, Linn.—In several places about Whittle, particularly by the canal side near Whittle springs.

Viola odorata, Linn.—Hedge bank near Roach bridge, north side of the Darwen. It is said to grow at Fishwick, and also on a hedge bank on the Wood Plumpton road.

—— *canina*, Linn.—Common on hedge banks, and in pastures and waste land throughout the district.

—— *palustris*, Linn.—Ribbleton moor plentifully. Wood at Nicky Nook. Marshy ground near Pickering castle, Whittle, abundantly.

—— *tricolor*, Linn.—Fields between Hesketh bank and Crossons. Frequent about Rufford.

Hyoscyamus niger, Linn.—By the side of the footpath leading from Hesketh bank to Crossons.

Solanum dulcamara, Linn.—In hedges occasionally, near Whittle springs. In many places near Preston.

Erythræa Centaurium, Pers.—In great abundance near the guide's house below Freckleton; also between Lytham and the lighthouse. and in similar places above Southport.

—— *littoralis*, Hook.—Among the sandhills above Southport.

Samolus Valerandi, Linn.—Plentifully between Lytham and the lighthouse Road-side between Ormskirk and Halsall.

Lonicera Periclymenum, Linn.—Abundantly in hedges between Roach bridge and the road to Whalley. In hedges in many places near Preston.

Euonymus Europæus, Linn.—Shrubbery at Walton hall, perhaps not truly wild.

Ribes rubrum, Linn.—Occasionally by the side of brooks. Salwick brook, near Cottam mill, and in several hedges in the neighbourhood.

—— *nigrum*, Linn —By the side of Salwick brook, near Cottam mill.

—— *alpinum*, Linn.—Hedge on the right-hand side of the road from Preston to Wood Plumpton, about a mile from the turning out of the Ashton road. Hedge on the right-hand side of the road from Longridge to Chipping.

—— *Grossularia*, Linn.—Occasionally in hedges, but not very common. Lane on the right-hand side of the road between the Sumpter's house and Tardy gate. Between Walton wood and the road.

Hedera Helix, Linn.—Common in woods and on old trees in hedge rows everywhere in the district.

Glaux maritima, Linn —On the sea-coast at Lytham and Blackpool abundantly.

Vinca minor, Linn.—Abundantly on a bank in a wood near the Larches, between the footpath and Ashton marsh, but perhaps not truly wild.

Chenopodium Bonus Henricus, Linn.—Frequent in waste ground and by road sides.

—— *maritimum*, Linn.—I am told that this plant is to be fonnd near Lytham.

—— *intermedium*, Koch.—Common in waste ground and on dunghills.

Salsoli Kali, Linn.—On the sandy sea shore about Lytham and Southport.

Ulmus campestris, Linn.—Occasionally in woods.

—— *montana*, Bauh.—Occasionally in woods near Whitewell.

—— *glabra*, Mill.—In woods.

Gentiana Pneumonanthe, Linn.—Ribbleton moor abundantly.

—— *amarella*, Linn.—Abundantly on hills about Rawtenstall.

—— *campestris*, Linn.—Plentifully between Lytham and the lighthouse.

Eringium maritimum, Linn.—Sea shore at Lytham.

Hydrocotyle vulgaris, Linn.—In swampy places not unfrequently. Plentifully in a marshy field near the river Loud, between Longridge and Chipping. Ribbleton moor abundantly.

Sanicula Europæa, Linn.—Frequently in woods near Preston. Brockholes wood. Wood between the tram-road and Walton.

Caucalis latifolia, Linn.—A solitary specimen of this was found during the present year in the yard at the back of the office of the Deputy Clerks of the Peace in Preston.

Torilis anthriscus, Gærtn.—Not unfrequently in hedges and waste ground.

Anthriscus vulgaris, Pers.—By the road-side near the barracks at Fulwood.

Scandix Pecten, Linn.—In corn-fields occasionally.

Myrrhis odorata, Scop.—In several places by the side of the brook near

Chipping towards Whitewell. Orchard at the back of the Talbot Arms inn, Chipping. In many places near the lead mine brook below Rivington pike.

Chærophyllum sylvestre, Linn.—Very common in waste places and pastures.

Daucus carota, Linn.—Brook-side at Fulwood. In many places near the Naze point and Lytham. Field between the tram-road and Walton.

Bunium flexuosum, With.—On hedge banks and in dry pastures occasionally. Abundantly in a wood between the tram-road and Walton hall.

Sium nodiflorum, Linn.—In brooks and ditches not unfrequently. Ditches near the cemetery.

—— *angustifolium*, Linn.—Pit between Kirkham and Little Marton.

Sison Amomum, Linn.—In hedges occasionally. By the side of the tram-road.

Æthusa Cynapium, Linn.—Lane from Avenham to Walton. Generally in gardens and cultivated ground. About Rufford.

Conium maculatum, Linn.—Frequent in hedges and waste ground.

Œnanthe fistulosa, Linn —Not unfrequently in pools and ditches. Very common in ditches about Martin mere. Pit by the side of tram-road.

—— *Phellandrium*, Linn.—Ditches about Martin mere.

—— *pimpinelloides*, Linn.—Marshes between the Naze point and Lytham abundantly.

Smyrnium Olusatrum, Linn.—I am informed that this plant grows between Warton and Lytham.

Apium graveolens, Linn.—Occasionally in ditches and marshy places. Near Preston cemetery. Very abundant in many places between Rufford and Martin mere.

Ægopodium Podagraria, Linn.—Abundantly by the side of the lane leading from near Walton bridge towards Melling's wood. Also by the side of the footpath near the Larches at Ashton.

Pimpinella Saxifraga, Linn.—Frequent in dry pastures and by road sides.

——— *magna*, Linn.—Not uncommon about Preston. Abundantly among the old lime works near Clitheroe.

Pastinaca sativa, Linn.—Borders of fields near Leyland and Euxton.

Heracleum Sphondylium, Linn.—Borders of fields in the district generally.

Viburnum Opulus, Linn.—Woods on each side of the toll-bridge on the Blackburn new road.

Sambucus nigra, Linn.—Frequent in woods and hedges.

Parnassia palustris, Linn.—Abundantly between Lytham and the lighthouse. Also in similar spots north of Southport.

Statice Armeria, Linn.—In sandy ground in Ashton marsh abundantly.

——— *Limonium*, Linn.—Sea shore, Knot end, opposite to Fleetwood.

Linum catharticum, Linn.—Dry pastures. Frequently about Clitheroe, particularly towards Pendle hill. Also about the Naze point.

Drosera rotundifolia, Linn.—Ribbleton moor. Leyland and Farringdon mosses. Pilling moss.

—— *longifolia*, Linn.—Leyland moss. Pilling moss.

—— *Anglica*, Huds.—Leyland moss. Pilling moss.

Galanthus nivalis, Linn.—Hedge bank near the fourth mile stone from Preston, about two fields to the right of the Lancaster road.

Narcissus Pseudo-Narcissus, Linn.—In several hedges and fields by the side of the road about a mile beyond the church at Walton-le-dale.

Allium ursinum, Linn.—Very abundantly in the wood between the tram-road and Walton hall. Also in many other places about Preston.

Ornithogalum umbellatum, Linn.—In a thicket near Cottam hall, by the side of the footpath leading into the Wood Plumpton road.

Gagea lutea, Ker.—On both sides of the lane leading from the Blackburn road to Cuerdale hall. I have been informed by a person that he has found this plant near Accrington.

Hyacinthus non-scriptus, Linn.—Woods near Walton, and in many other places about Preston in great abundance.

Asparagus officinalis, Linn.—A few plants of this species are to be found each year among the sand hills at Lytham, and I understand were found there many years ago; but probably they are not truly wild.

Narthecium Ossifragum, Huds.—Plentiful in wet places on Longridge fell, and in many other similar places about Preston.

Acorus Calamus, Linn.—In a pit by the footpath to the cemetery, where it is this year (1858) flowering in considerable quantities. Pit on the Moor hall estate. By the side of the tram-road.

Juncus glaucus, Sibth.—Frequent in wet pastures.

—— *effusus*, Linn.—Frequent in wet pastures.

—— *conglomeratus*, Linn.—Common in wet pastures.

—— *squarrosus*, Linn.—Common on wet heathy ground.

—— *compressus*, Jacq.—Common in wet pastures. Marshes between the Naze point and Lytham.

—— *bufonius*, Linn.—Common in marshy fields.

—— *uliginosus*, Sibth.—Common in wet swampy meadows.

—— *acutiflorus*, Ehrt.—Common in boggy places and ditches.

Luzula pilosa, Willd.—Dry banks by the side of woods near Redscar.

—— *campestris*, Br.—Frequent in dry pastures near Preston. Field at the further side of the cemetery.

—— *sylvatica*, Bich.—Wood at Nicky Nook.

Berberis vulgaris, Linn.—Plentifully in a hedge between Rufford and

Martin mere. I have not met with it elsewhere in this part of the county, but last year I found it within a few yards of the Hodder, on the Yorkshire side near Dawford bridge. I have been told that it grows in a hedge near the Preston cemetery.

Peplis Portula, Linn.—Ditch on Ribbleton moor.

Rumex crispus, Linn.—Frequent in waste places and pastures and by road sides.

—— *pulcher*, Linn.—Frequent on heaps of rubbish and by road sides.

—— *sanguineus*, Linn.—Frequent in woods and waste ground.

—— *palustris*, Sm.—Common in boggy and marshy ground and ditches.

—— *obtusifolius*, Linn.—Common in fields and waste places.

—— *Acetosa*, Linn.—Frequent in meadows and pastures about Preston.

—— *Acetosella*, Linn.—On dry hedge banks and in waste places abundantly.

Triglochin palustre, Linn.—Ashton marsh and near Nicky Nook. Marshy ground above Walton wood.

—— *maritimum*, Linn.—Ashton marsh.

Alisma Plantago, Linn.—Brook between the tram-road and Walton. Very common in ditches and ponds about Preston.

—— *ranunculoides*, Linn.—In open drains and trenches on Ribbleton moor, and not unfrequently in similar situations about Preston.

Epilobium angustifolium, Linn.—Plentiful on Pilling moss, near Rawcliffe.

—— *hirsutum*, Linn.—Ditches in the fields at the back of the Bridge inn, Penwortham, and in many similar places about Preston.

—— *parviflorum*, Schub.—Frequently in ditches in the neighbourhood.

—— *montanum*, Linn.—Near Hoghton tower and in several other places.

—— *palustre*, Linn.—Frequent in marshy ground, and by the side of ditches and brooks.

—— *tetragonum*, Linn.—In similar places to the last.

Chlora perfoliata, Linn.—Abundantly in the bottoms among the sandhills north of Southport. Near Roach bridge, on the side of the Darwen nearest to Hoghton tower.

Vaccinium Myrtillus, Linn.—Plentiful on Longridge fell and other hills in the neighbourhood.

—— *Vitis-idæa*, Linn.—Pendle hill.

—— *Oxycoccos*, Linn.—Longridge fell. Pendle hill. Beacon fell, in great abundance. Plentifully on Pilling moss.

Calluna vulgaris, Salsb.—Very abundant on Longridge fell.

Erica cinerea, Linn.—Longridge fell.

—— *Tetralix*, Linn.—Longridge fell, Pendle hill.

Acer Pseudo-platanus, Linn.—In woods and by the sides of rivers plentifully.

Acer campestre, Linn.—Frequent in woods.

Polygonum Bistorta, Linn.—Frequent in meadows and pastures. Meadows below Walton lodge.

—— *aviculare*, Linn.—Frequent by road sides and in waste places.

—— *Convolvulus*, Linn.—Not uncommon in cultivated and waste ground and in corn fields. Common about Leyland and Croston.

—— *amphibium*, Linn.—Frequent in ditches and ponds. By the side of the canal in many places.

—— *Persicaria*, Linn.—Field between the tram-road and Walton.

—— *lapathifolium*, Linn.—In the same field as the last.

—— *Hydropiper*, Linn.—Frequent in ditches and ponds.

Paris quadrifolia, Linn.—Wood at Walton-le-dale. Also in the woods at Redscar and the Tunbrook. Wood between the tram-road and Walton.

Adoxa Moschatellina, Linn.—Hedge banks on each side of South Meadow lane; also of Watery lane, Fishwick, and in many other similar places.

Butomus umbellatus, Linn.—In the canal a short distance north of Preston. Pit near the footpath to Cadaley mill with Stratiotes aloides.

Andromeda polifolia, Linn.—Farringdon moss and Pilling moss.

Pyrola rotundifolia, Linn.—Abundantly between Lytham and the lighthouse.

Chrysosplenium alternifolium, Linn.—In several places on the bank of a brook near the footpath leading from Sion hill, Ribbleton moor, to Fulwood barracks. By a rivulet between Parlike pike and Chipping.

—— *oppositifolium*, Linn.—Very common by the sides of brooks and springs.

Saxifraga umbrosa, Linn.—Near Lower Lee, Wyersdale, by the side of a brook running into the Wyre. By the side of a brook a little to the north of Rawtenstall.

Scleranthus annuus, Linn.—Frequent in corn fields with a dry soil.

Saponaria officinalis, Linn.—In a hedge by the north side of the Ribble between Preston and Walton. Plentifully in several places near Ribchester bridge. By the side of the Calder near its junction with the Ribble.

Silene inflata, Sm.—Frequent in fields and waste places.

—— *maritima*, With.—Under the sand hills at Lytham. Abundantly on the shore near Lytham, in the direction of the Naze point.

Stellaria nemorum, Linn.—Melling's wood and South Meadow lane.

—— *media*, With.—Very common both in cultivated and waste ground.

—— *holostea*, Linn.—Frequent on hedge banks and in woods.

—— *graminea*, Linn.—Frequent in hedges and bushy places.

—— *uliginosa*, Murr.—Wet places in the wood between the tram-road and

Walton, and in the brook below it, and in several other similar places near Preston.

Honckenya peploides, Ehrt.—Sandy places on the banks of the Ribble below Preston frequently.

Arenaria trinervis, Linn.—Melling's wood. Wood at Nicky Nook.

—— *serpyllifolia*, Linn.—Plentifully in dry places on Ashton marsh.

—— *rubra*, Linn.—Frequent in sandy corn fields. Between Hesketh bank and Crossons. Plentifully in a field between Whittle springs and Pickering castle.

—— *marina*, Oed.—Ashton marsh frequently.

Sedum Telephium, Linn.—Clitheroe castle. Hedge at Heapey.

—— *acre*, Linn.—Abundantly in dry places in Ashton marsh. Farm yard wall at Elston.

Oxalis Acetosella, Linn.—Very common in woods and on shady hedge banks.

Lychnis Flos-cuculi, Linn.—Common in wet meadows and marshy places.

—— *sylvestris*, Hob.—Very common in woods and on shady hedge banks.

Cerastium vulgatum, Linn.—Frequent on banks and in waste ground.

—— *viscosum*, Linn.—Frequent in similar places to the last.

—— *semidecandrum*, Linn.—Not uncommon on walls and sandy waste ground.

Spergula arvensis, Linn.—Frequent in corn fields.

—— *nodosa*, Linn.—Ashton marsh frequently. Between Lytham and the lighthouse.

Lythrum salicaria, Linn.—Marshy place by the side of the tram-road, and in many similar places near Preston.

Agrimonia Eupatoria, Linn.—Frequent in the margins of fields and by hedge sides.

Reseda Luteola, Linn.—Frequent about Clitheroe. Between the Naze point and Lytham.

Prunus Padus, Linn.—In several places between Longridge and Knowl green. A fine tree between Ribchester bridge and Salesbury hall. Hedge below Pickering castle, near Whittle springs.

—— *Cerasus*, Linn.—Woods between the Blackburn new road and Redscar abundantly. Wood between the tram-road and Walton.

—— *insititia*, Linn.—In a hedge near the footpath above Walton wood.

—— *spinosa*, Linn.—Very frequent in hedges.

Mespilus Oxyacantha, Gærtn.—Frequent in woods.

Pyrus malus, Linn.—Frequent in woods and hedges.

—— *Aucuparia*, Gærtn.—In mountainous woods. About Longridge and Clitheroe. Not unfrequent about Uplands near Broughton.

Spiræa Ulmaria, Linn.—Frequent in meadows and by the sides of brooks and ditches. Meadows at the back of the Bridge inn, Penwortham.

Rosa spinosissima, Linn.—Frequent in hedges and on dry banks. Hedges near the Grange at Penwortham abundantly. Between Tarleton and Hesketh bank abundantly.

—— *Sabini*, Woods.—Woods about Redscar and Boilton. Wood by the side of the Ribble at Clitheroe

—— *canina*, Linn.—Very common in hedges.

—— *arvensis*, Huds.—Thicket near the footpath by the side of the Salwick brook, in the field next the road leading to Lea road station, the further side from Preston.

Rubus Idæus, Linn.—Penwortham wood. Woods by the side of the river Brock very abundantly. By the sides of the road between Loud bridge and Beacon fell.

—— *cæsius*, Linn.—Frequent in woods and on hedge banks.

—— *Corylifolius*, Sm.—Not unfrequent in hedges. Hedge by the side of the tram-road.

—— *fruticosus*, Linn.—Very common in woods and hedges.

—— *Chamæmorus*, Linn.—Abundant on Pendle hill.

Fragaria vesca, Linn.—Frequent in woods. Woods about Redscar.

Potentilla anserina, Linn.—Very common by road sides.

——— *verna*, Linn.—Is said to grow in dry pastures near Preston, but I have not yet met with it.

——— *reptans*, Linn.—Frequent by road sides and on banks.

——— *Fragariastrum*, Ehrt.—Very common on dry banks.

Tormentilla officinalis, Sm.—Very common above Longridge. About Farringdon moss, and in many similar places.

——— *reptans*, Linn.—Common about Cadaley and other places near Preston.

Geum urbanum, Linn.—Frequent on hedge banks and in woods.

—— *rivale*, Linn.—By the side of the lane leading towards Melling's wood. Wood between the tram-road and Walton.

Comarum palustre, Linn.—In many pits about Preston. Pits by the side of Pope lane, Ribbleton.

Chelidonium majus, Linn.—Lane leading from Whinfield house towards Greave's Town, Ashton. Hedge at the Guide's house, near Naze point. This plant has been found in several places about Preston, but in consequence of its being much sought after by herbalists it is now comparatively scarce.

Glaucium luteum, Scop.—Very abundantly on the sea shore between Heat bank and Morecambe.

Papaver dubium, Linn.—Corn fields between Hesketh bank and Crossens.

——— *Rhœas*, Linn.—In similar situations to the last.

Nymphæa alba, Linn.—Ditches at Martin mere. I am informed that it grows very fine and abundantly in a pond about half-way between Wood Plumpton church and Carr's green, also at Bannister hall Print works. Pit near Croston.

Nuphar lutea, Sm.—In many places in the Salwick brook, especially near Cottam mill. Pond near Clayton's farm, Broughton. In the canal at Rufford bridge.

Aquilegia vulgaris, Linn.—Occasionally in woods by the side of the river Brock, between its source and the Railway station.

Stratiotes aloides, Linn.—Very abundantly in pits on the Moor Hall estate on the north side of Preston, near the footpath leading towards Cadaley mill.

Anemone nemorosa, Linn.—Very common in woods and thickets and on banks.

Clematis Vitalba, Linn.—Frequent about Clitheroe.

Ficaria verna, Huds.—Very common on banks and in woods and meadows.

Ranunculus bulbosus, Linn.—Very common in meadows and pastures.

——— *Lingua*, Linn.—I am informed that this plant grows in ditches between Kirkham and Blackpool.

——— *repens*, Linn.—Frequent in shady places, particularly in gardens.

——— *Flammula*, Linn.—Frequent in watery places.

——— *acris*, Linn.—Common in meadows and pastures.

——— *aquatilis*, Linn.—Brook between the tram-road and Walton, and in many other brooks and ditches.

——— *auricomus*, Linn.—Meadow below Cottam mill towards Ashton Tunbrook wood.

——— *hederaceus*, Linn.—Ditch near Ribbleton moor.

——— *sceleratus*, Linn.—Frequent by the sides of ditches and pits. In several places between Greave's Town and Ashton marsh.

Helleborus viridis, Linn.—In a thicket by the side of the footpath leading from the Wood Plumpton road to Cottam hall.

Caltha palustris, Linn.—Very common in marshy places and ditches, edges of brooks and similar situations.

Ajuga reptans, Linn.—Very common in woods and pastures.

Teucrium Scorodonia, Linn.—Not uncommon in dry woods and fields. Plentiful in a field at Sion hill, Ribbleton.

Verbena officinalis, Linn.—By the side of the road leading from Bolton-le-sands to Carnforth. It is said also to grow near Wood Plumpton church, and near the site of Walton hall; also at Ashton.

Mentha hirsuta, Linn.—Frequent in ditches.

——— *arvensis*, Linn.—Common in corn fields.

——— *piperita*, Sm.—Plentifully by the side of a road at Leyland, opposite to one of the entrances to Worden.

Glechoma hederacea, Linn.—Very common on hedge banks.

Lamium album, Linn.—Frequent by hedges and on heaps of rubbish.

——— *purpureum*, Linn.—A very common weed in gardens.

Galeopsis Tetrahit, Linn.—Very common in corn fields, gardens and waste places.

——— *versicolor*, Curt.—Very common in corn fields near Croston. In corn fields near Rufford. Fields between Scorton and Nicky nook.

Galeobdolon luteum, Huds.—In Melling's wood; also in the Tunbrook wood.

Betonica officinalis, Linn.—Frequent in woods.

Stachys sylvatica, Linn.—Not uncommon by hedges and upon rubbish heaps.

——— *palustris*, Linn.—Frequent by rivers, ditches and pits.

Origanum vulgare, Linn.—I have not observed this plant very near to Preston, but it is very plentiful among the old lime works at Clitheroe. It also grows near Whalley abbey.

Thymus Serpyllum, Linn.—Frequent in dry pastures.

——— *Acinos*, Linn.—By the side of the footpath from Clitheroe to Worston. In many places near Clitheroe.

Scutellaria galericulata, Linn.—By the side of the brook between the tramroad and Walton.

Prunella vulgaris, Linn.—Frequent in pastures.

Bartsia viscosa, Linn.—This plant has been found near Blackpool in marshy ground by the sea. I have seen a dried specimen which was found in that locality. It is said also to grow on Crosby marsh and in ditches near Lathom house. It has also been found behind the sandhills beyond Lytham.

——— *Odontites*, Huds.—Frequent by road sides and in corn fields.

Rhinanthus Crista-galli, Linn.—Frequent in pastures. Abundant in pastures at the back of the Bridge inn at Penwortham.

Euphrasia officinalis, Linn.—Frequent in dry pastures and by road sides.

Melampyrum pratense, Linn.—Frequent in woods and thickets.

Lathræa squamaria, Linn.—I have been informed that this plant has been found in a wood at Samlesbury.

Pedicularis palustris, Linn.—Frequent on mosses and on marshy ground

——— *sylvatica*, Linn.—Wet heaths and mosses about Longridge.

Linaria Cymbalaria, Mill.—Old walls at Walton hall.

——— *vulgaris*, Mill.—Not uncommon in hedges; hedge banks by the

Ribble, near Preston; by the side of the footpath from Hesketh bank to Crossons.

Antirrhinum majus, Linn.—On Clitheroe castle.

Scrophularia nodosa, Linn.—Not uncommon in woods and shady places; Mellings wood.

——— *aquatica*, Linn.—Very common by the sides of ditches and other watery places.

Digitalis purpurea, Linn.—Frequent in hilly situations, about Longridge.

Limosella aquatica, Linn.—By the side of Ribbleton lane.

Draba verna, Linn.—Not unfrequent on walls and dry banks; road side between Rufford and Scarisbrick.

Lepidium Smithii, Hook.—Occasionally in the edges of corn fields about Rufford, especially towards Martin mere; between Greave's Town and Ashton marsh.

Thlaspi Bursa-pastoris, Linn —Very common by road sides.

Cochlearia officinalis, Linn.—Melling's wood; Ashton marsh.

——— *Danica*, Linn.—Banks about Blackpool, abundantly; also in similar places, near Lytham.

——— *Armoracia*, Linn.—Plentifully on the bank of the North Union railway, near the bridge over the Ribble.

Senebiera Coronopus, D. C.—I found a solitary specimen of this plant a year or two ago near Walton bridge, by the side of the Ribble.

Cakile maritima, Scop.—Frequent on the sea shore about Lytham.

Cardamine hirsuta, Linn.—Frequent by the side of springs and in shady places; by the side of Pope lane, Ribbleton, very abundant.

——— *pratensis*, Linn.—Very frequent in meadows and watery places

——— *amara*, Linn.—Plentifully in wet places in Melling's wood, and in many similar places about Preston.

Arabis Thaliana, Linn.—Frequent near Lytham towards Blackpool.

—— *Arabis hirsuta*, Br.—Occasionally on walls—Whalley abbey.

Nasturtium officinale, Br.—Not unfrequent in brooks and ditches.

—— *sylvestre*, Br —Wall above the stone delph at Preston; several other places near Preston.

—— *terrestre*, Br.—Between Greave's Town and Ashton marsh.

Sisymbrium officinale, Scop.—Very common by road sides and in hedges.

—— *Sophia*, Linn.—Dry banks between Church Town (Southport), and the sea shore.

Barbarea vulgaris, Br.—Frequent on the banks of rivers and ditches about Rufford, especially towards Martin mere; side of the brook by Walton hall gardens; in many places between Longridge and Ribchester.

—— *cheiranthoides*, Linn.—In corn fields about Rufford.

Barbarea Alliaria, Linn.—Common in hedges.

Brassica Napus, Linn.—Frequent in corn fields.

—— *Rapa*, Linn.—Frequent by the edges of fields.

—— *campestris*, Linn.—Common in corn fields.

Sinapis arvensis, Linn.—Frequent in corn fields.

Raphanus Raphanistrum, Linn.—Very common in corn fields.

Erodium cicutarium, Sm.—Frequent upon the sand hills about Lytham and Southport, and occasionally on the bank of the Ribble below Preston.

Geranium phœum, Linn.—By the side of the lane leading from Greave's Town to Ashton marsh—by the side of a brook and in an orchard at the back of Osbaldeston house, near Moon's mill, Preston. It is said also to grow on several other spots near the last-named locality, particularly along the course of the same brook; also near the Vicarage, at Much Hoole.

—— *rotundifolium*, Linn.—I am informed that this plant grows in the Church yard at Kirkham.

—— *pratense*, Linn.—Frequent on the south bank of the Ribble at Preston.

—— *molle*, Linn.—Occasionally in dry places in Ashton marsh—borders of corn fields about Rufford.

—— *Robertianum*, Linn.—Very common in woods and on hedge banks.

—— *pusillum*, Linn.—Occasionally on the bank of the Ribble below Preston, by the side of the tram-road.

—— *sanguineum*, Linn.—About Fleetwood, near the sea coast; between the Naze Point, and the Guide's house.

—— *dissectum*, Linn.—Bank between Greaves' Town and Ashton marsh.

Malva sylvestris, Linn.—Frequent by hedges and road sides.

—— *rotundifolia*, Linn.—Occasionally in similar places to the last.

Fumaria officinalis, Linn.—Frequent in gardens and corn fields.

—— *capreolata*, Linn.—Between Hesketh bank and Crossens. Hedge by the side of the road near the Roman camp at Kirkham.

Corydalis claviculata, D. C.—Abundantly in a wood at Higher Brockholes.

Polygala vulgaris, Linn.—Frequent in dry pastures—above Longridge.

Genista Scoparia, Hook.—Hilly ground at the further end of Melling's wood.

—— *anglica*, Linn.—Ribbleton moor.

—— *tinctoria*, Linn.—By the footpath from Grimsargh station to Goosnargh; very frequent at the Naze Point.

Ulex Europæus, Linn.—Very common in heathy places, and on dry banks.

Ononis arvensis, Linn.—Not uncommon in the borders of fields and dry pastures. By the side of the Ribble below Preston, frequently.

Anthyllis vulneraria, Linn —Plentifully about Clitheroe; also among the sand hills to the north of Southport.

Orobus tuberosus, Linn.—In a field to the left of the old road to Lancaster, beyond Plungington; by the side of the footpath from Sion hill to the barracks.

Lathyrus pratensis, Linn.—Frequent in pastures and hedges.

Vicia Cracca, Linn.—Frequent in hedges and thickets.

—— *sativa*, Linn.—Frequent in corn fields.

—— *sepium*, Linn.—Common in hedges and woods.

Ervum hirsutum, Linn.—In Frenchwood.

Trifolium officinale, Sm.—Between the Naze Point and Lytham, in several places.

—— *repens*, Linn.—Common in meadows and pastures.

—— *pratense*, Linn.—Common in meadows and pastures.

—— *arvense*, Linn.—Sand hills beyond Lytham.

—— *filiforme*, Linn.—Common in dry pastures.

—— *fragiferum*, Linn.—Preston marsh.

—— *procumbens*, Linn.—Common about Clitheroe, among the old lime works. Ashton marsh.

Lotus major, Scop.—Pastures between the tram-road and Walton.

—— *corniculatus*, Linn.—Frequent in pastures.

Medicago minima, Linn.—Near the sea coast north of Southport.

Hypericum quadrangulum, Linn.—Frequent by the banks of rivers and brooks.

—— *perforatum*, Linn.—Frequent on hedge banks and in woods.

—— *hirsutum*, Linn.—Woods and thickets near Redscar.

Hypericum Androsæmum, Linn.—I am informed that this plant grows at Freckleton, also in a wood at Higher Brockholes.

—— *elodes*, Linn.—Pools on Ribbleton moor.

—— *humifusum*, Linn.—I am told that this plant grows by a brook side at Fulwood.

—— *pulchrum*, Linn.—Not uncommon about Rufford; between Scorton and Nicky Nook.

Tragopogon pratensis, Linn.—Banks between Hesketh bank and Crossons; between the Naze Point and Lytham. Ashton marsh.

Picris hieracioides, Linn.—Frequent in the borders of fields.

Sonchus arvensis, Linn.—Frequent in corn fields.

—— *oleraceus*, Linn.—Very common in gardens, borders of fields and waste places.

Prenanthes muralis, Linn.—Occasionally on old walls; plentifully on a dry bank opposite Barton Lodge; in plantations about Claughton hall.

Leontodon Taraxacum, Linn.—Very common in pastures and by road sides.

Apargia autumnalis, Willd.—Frequent in meadows and pastures and on banks.

—— *hispida*, Willd.—Frequent in meadows and pastures.

—— *hirta*, Sm.—Frequent in dry pastures.

Hieracium pilosella, Linn.—Frequent in dry pastures and on banks.

—— *Subaudum*, Sm.—Woods and dry banks; frequent on dry banks near Rufford towards Martin mere. Near Walton hall gardens. Near Leyland.

—— *sylvaticum*, Sm.—Dry banks about Ribbleton moor. Preston, in many places. Common about Clitheroe. Near Walton hall gardens.

—— *murorum*, Linn.—Frequent on old walls and on heaps of rubbish.

—— *paludosum*, Linn.—Holland wood at Walton-le-dale, abundantly.

Hypochæris radicata, Linn.—Very common in pastures and waste ground.

Lapsana communis, Linn.—Frequent on hedge banks and in waste places.

Arctium Lappa, Linn.—Common in waste ground.

Carduus tenuiflorus, Curt.—Banks between Hesketh Bank and Crossons.

——— *nutans*, Linn.—Between Preston and Walton.

Cnicus lanceolatus, Willd.—Common by road sides and in waste places.

—— *palustris*, Willd.—Frequent in wet meadows and by ponds and ditches.

—— *arvensis*, Hoffm.—Frequent in waste places and pastures.

Carlina vulgaris, Linn.—Among the sand hills, north of Southport; dry bank, near Nicky Nook, Garstang.

Bidens cernua, Linn.—By the side of a pit near the cemetery. Ditches at Croston and Pilling moss.

——— *tripartita*, Linn.—About Marton mere abundantly.

Eupatorium canabinum, Linn.—Plentifully by the side of the Brock, not far from and on the east side of the Railway; Melling's wood; woods at Bolton and Brockholes.

Tanacetum vulgare, Linn.—Hedge on the right hand side of the lane between Avenham and Walton; by the side of the river at Redscar.

Artemisia vulgaris, Linn.—Frequent in hedges.

——— *maritima*, Linn.—Skippool, near Fleetwood.

Gnaphalium uliginosum, Linn.—Occasionally in damp places where water has stood during the winter.

—— *dioicum*, Linn.—Near Nicky Nook. On hills about Rawtenstall.

—— *minimum*, Sm.—Frequent in sandy fields.

Gnaphalium Germanicum, Huds.—Frequent in dry fields and waste grounds.

Conyza squarrosa, Linn.—By the road side between Bolton and Carnforth.

Erigeron acris, Linn.—Among the sand hills at Lytham.

Tussilago Farfara, Linn.—Common on railway banks and in clayey fields.

Petasites vulgaris, Desf.—Common on the south bank of the Ribble, near Darwen mouth, and in many other places near Preston.

Senecio vulgaris, Linn.—Very common in gardens and waste ground.

——— *tenuifolius*, Jacq.—In many places between the Naze point and Lytham; road side near the Black Bull, in Broughton.

——— *Jacobæa*, Linn.—Common in dry pastures and by road sides.

——— *aquaticus*, Huds.—In wet meadows and by the sides of rivers.

——— *viscosus*, Linn.—Dry, barren places between Rufford and Martin mere. Pilling moss.

——— *sylvaticus*, Linn.—Leyland moss. Pilling moss.

——— *saracenicus*, Linn.—I have been informed that this plant grows in a meadow beyond Redscar, near the Ribble.

Aster Tripolium, Linn.—Common in Ashton marsh.

Solidago Virgaurea, Linn.—Not unfrequently in rocky places and in woods.

Inula dysenterica, Linn.—Occasionally by way sides in wet places; by the side of the tram-road, about a mile and a half from Preston.

Cineraria palustris, Linn.—Is said to grow in ditches on Pilling moss.

Bellis perennis, Linn.—Very common in meadows and pastures.

Chrysanthemum Leucanthemum, Linn.—Dry pastures and road sides.

——— *segetum*, Linn.—Not uncommon in corn fields.

Pyrethrum Parthenium, Sm.—Occasionally on hedge banks; abundantly on Clitheroe Castle hill.

Pyrethrum inodorum, Sm.—Common in waste ground and by way sides.

Anthemis Cotula, Linn.—Corn fields, waste ground, and road sides.

Achillea Ptarmica, Linn.—Borders of fields, and by the sides of canals; canal side near Whittle springs; road side, Penwortham hill.

——— *millefolium*, Linn.—Common on banks and by road sides.

Centaurea nigra, Linn.—Common in dry pastures.

——— *Cyanus*, Linn.—Occasionally in corn fields.

——— *Scabiosa*, Linn.—Dry pastures and in the borders of corn fields.

Orchis bifolia, Linn.—In a field at Sion hill, Ribbleton; plentifully in a field on the north side of the Darwen, above Roach bridge.

——— *morio*, Linn.—In several fields in Cottam and Lea.

Orchis mascula, Linn.—Frequent in the borders of fields; very fine and abundant by the Salwick brook, on the west of the road leading from the Plough Inn to Wood Plumpton.

——— *latifolia*, Linn.—Between Lytham and the lighthouse.

——— *maculata*, Linn.—Common in meadows and woods.

Gymnadenia conopsea, Br.—Plentifully about the limekilns near Clitheroe.

Listera ovata, Br.—Fulwood, near Sion hill; Hedge bank, by the side of the road from Clitheroe to Sabden; Tunbrook wood.

——— *cordata*, Br.—Is said to grow on Pendle hill.

——— *Nidus avis*, Hook.—I am informed that this plant grows in a wood at Samlesbury.

Epipactis latifolia, Sm.—Wood on the Lancashire side of the river Hodder, between the higher and lower bridges. I found a solitary specimen growing among the sand hills north of Southport, in August, 1857. It is said also to grow in a wood, near Nicky Nook, Garstang.

——— *palustris*, Sm.—In marshy places, between Lytham and the lighthouse; also in similar spots among the sand hills north of Southport.

Euphorbia Peplus, Linn.—Common in corn fields and gardens.

——— *exigua*, Linn.—In similar situations.

——— *helioscopia*, Linn.—In similar situations.

——— *Paralia*, Linn.—Sand hills between Lytham and Blackpool.

Typha latifolia, Linn.—Pools by the side of the East Lancashire railway, in several places between Croston and Burscough, especially near Rufford. Pit between Kirkham and Marton.

——— *angustifolia*, Linn.—Pit between Kirkham and Marton. By the side of Martin mere.

Sparganium ramosum, Huds.—Brook between the tram-road and Walton, and in many similar places.

——— *simplex*, Huds.—Brook between the tram road and Walton; pits on the Moor hall estate.

Carex arenaria, Linn.—Upon Lytham sand hills.

——— *ovalis*, Good.—Frequent in wet meadows.

——— *sylvatica*, Huds.—In Tunbrook wood. I have not paid much attention to this tribe.

——— *pilulifera*, Linn.—Not uncommon in wet heathy ground.

——— *riparia*, Curt—Frequent at the edges of rivers, ditches, and pools.

——— *acuta*, Linn.—Frequent in similar situations to the last.

——— *paludosa*, Good.—Frequent in similar places. In Frenchwood.

——— *pendula*, Huds—Walton wood in considerable quantities; wood between the tram-road and Walton hall gardens, abundantly.

Carex, extensa, Good.—Ribbleton moor; near Nicky Nook.

——— *dioica*, Linn.—Ribbleton moor.

——— *remota*, Linn.—By the side of the road to the cemetery; very abundant in the wood at Nicky Nook.

——— *pseudo-cyperus*, Linn.—Pit by the side of the tram-road near Preston; ditch by the side of a wood at Higher Brockholes.

Alnus glutinosa, Gærtn.—Very common by the sides of rivers, brooks, and pits.

Urtica urens, Linn.—Very common in gardens and waste places.

——— *dioica*, Linn.—Very common in hedges and waste places.

Ceratophyllum demersum, Linn.—Frequent in ditches and slow streams.

Myriophyllum verticillatum, Linn.—In Ashton marsh.

Sagittaria sagittifolia, Linn.—In the canal near Whittle springs.

Arum maculatum, Linn.—Very common in hedges and bushy places.

Poterium Sanguisorba, Linn.—Frequent about Clitheroe.

Quercus Robur, Linn.—In woods.

Fagus sylvatica, Linn.—In woods.

Betula alba, Linn.—In woods.

Carpinus Betulus, Linn.—Frequent in woods and hedges.

Corylus Avellana, Linn.—Common in woods and hedges.

Pinus sylvestris, Linn.—Occasionally in woods.

Empetrum nigrum, Linn.—On Longridge and Beacon fells.

Myrica Gale, Linn.—By the sides of ditches about Martin mere. Very abundant on Pilling moss.

Humulus Lupulus, Linn.—In hedges occasionally; hedge by the side of the road between Broughton and Myerscough.

Tamus communis, Linn.—Frequent about Clitheroe.

Populus alba, Linn.—Frequent in moist woods.

——— *tremula*, Linn.—Not uncommon in woods and hedge rows.

——— *nigra*, Linn.—Frequent; banks of rivers and hedge rows.

Mercurialis perennis, Linn.—Very common on hedge banks.

Hydrocharis Morsus-ranæ, Linn.—In a pit near the Preston cemetery; pit by the side of Ribbleton moor; ditches at Martin mere.

Atriplex patula, Linn.—Very common on dunghills and waste ground and by the sides of roads.

——— *laciniata*, Linn.—Sea shore at Knot end, opposite to Fleetwood.

Polypodium vulgare, Linn.—Very common upon hedge banks.

——— *Phegopteris*, Linn.—Brockholes wood, near Preston; also in several places near Salesbury and Dinkley halls.

Polypodium Dryopteris, Linn.—Abundantly in a wood at Nicky Nook; on rocky places by the side of the Lead mine brook below Rivington Pike.

Aspidium Filix-mas, Sw.—Frequent in woods.

——— *aculeatum*, Sw.—In woods and on shady hedge banks.

——— *lobatum*, Sw.—In similar situations to the last.

Asplenium filix fœmina, Bernb.—Occasionally on shady hedge banks.

——— *Trichomanes*, Linn.—Occasionally on walls; on a bridge near the Wood Plumpton road, where the railway crosses Salwick brook.

——— *marinum*, Linn.—Near Heysham.

——— *Ruta-muraria*, Linn.—On Walton and Penwortham bridges.

——— *Adiantum-nigrum*, Linn.—Goosnargh church yard wall.

Scolopendrium vulgare, Sym.—Common on hedge banks.

Blechnum boreale, Sw.—Common on parts of Longridge fell.

Pteris aquilina, Linn.—Very common in woods.

Osmunda regalis, Linn.—Wood at Higher Brockholes; abundantly in several places between Rufford and Martin mere, especially by the side of a wood facing the park. Neighbourhood of Catforth.

Botrychium Lunaria, Sw.—Is said to grow on Mellor moor, and also on a hill between Burnley and Colne.

Ophioglossum vulgatum, Linn.—By a hedge side between the tram-road and Walton.

Lycopodium clavatum, Linn.—Pendle Hill.

——— *Selago*, Linn.—Pendle Hill.

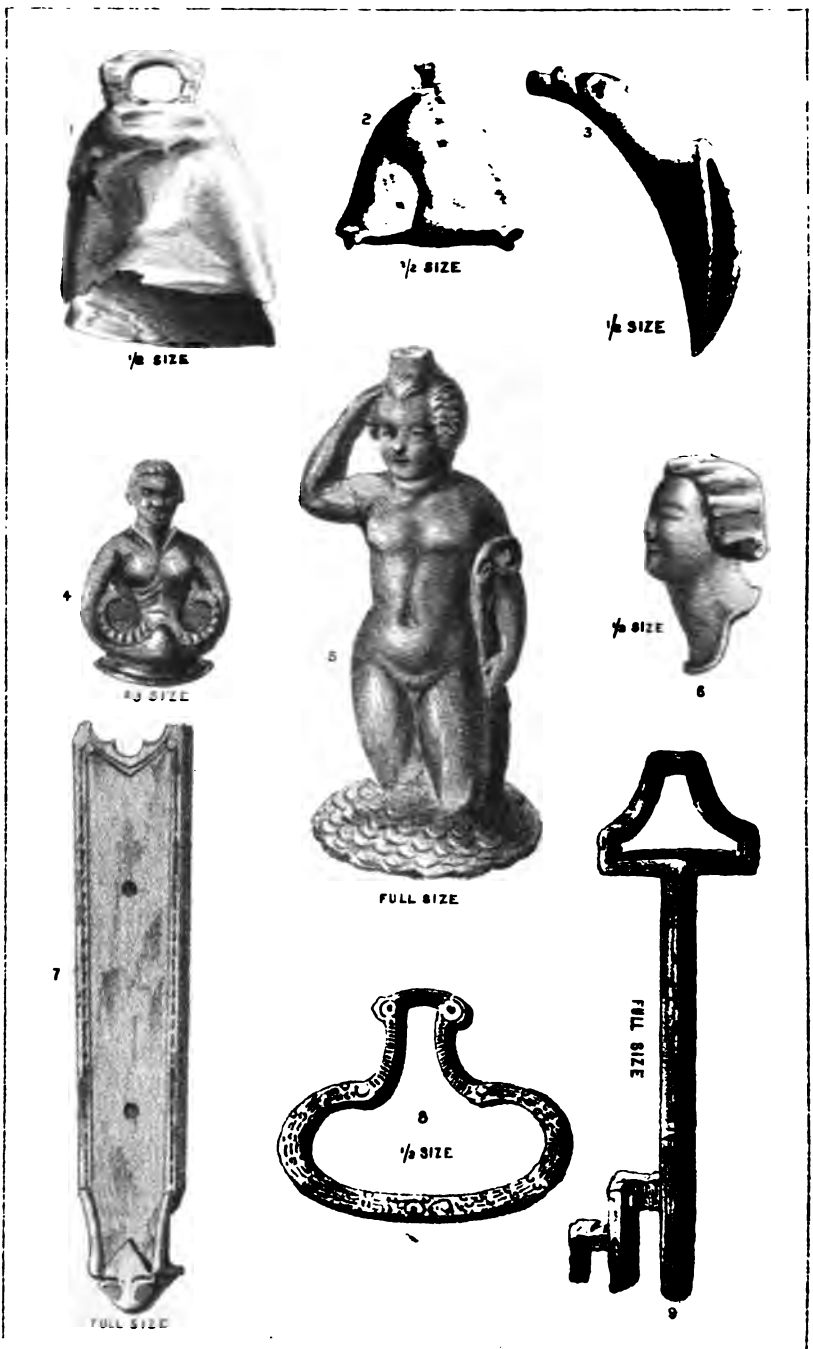
Equisetum arvense, Linn.—In fields and by way sides.

——— *fluviatile*, Linn.—Near the footpath leading from Roach bridge towards Hoghton Tower; and in similar situations about Preston.

——— *sylvaticum*, Linn.—Frequent in moist woods.

——— *limosum*, Linn—Frequent by the sides of pits.

——— *palustre*, Linn.—Ditches between Rufford and Martin mere.



ANTIQUITIES FROM MACON

DESCRIPTION OF SOME ANTIQUITIES FROM MACON, IN THE SOUTH OF FRANCE.

By Mr. H. Ecroyd Smith.

(Read 3rd December, 1857.)

The following remarks constitute but a simple assortment and attempted description of the Antiquarian Remains before us. Owing to the lack of favorable opportunity, I must trust to your indulgence to excuse a more elaborate dissertation.

It is unquestionable that works of art, or even *fragments* of early ingenuity and skill, are the best recording witnesses of the condition of art in times past. In the present day there is an improved taste for such objects, or a higher appreciation of the services which they are capable of rendering; and this has no doubt been promoted by the instrumentality of such societies as this. It is now by no means a rare occurrence for an English traveller to secure such remains, when opportunity offers, for the examination and use of the professedly curious, or for personal reference and interest. The garnering of this small, but interesting collection, is one of those instances.

Journeying, two years ago, in the South-east of France, Mr. R. A. M'Fie had the pleasure, as we propose to accord him the credit, of securing these articles from the too common doom of the melting-pot. The locality where they were found is the present town of Mâcon, capital of the Department of Saone et Loire, and situate on the right, or west, bank of the river Saone, 205 miles, in a direct line, S.E., from Paris. In ancient times it was one of the chief towns of the Œdui, and called by Cæsar, (in his treatise De Bello Gallico, Lib. VII. c. 90), *Matisco*, whence the modern appellation Mâcon, formerly written Mascon. It is also mentioned in the Itinerary of Antoninus, and in the "Notitia Imperii," where it is designated *Castrum* (a fortress), and noticed for its manufacture of arrows. The chief Roman remains existing are said to be a triumphal arch, and the ruins of a temple dedicated to the god Janus. Although now a thriving market-town, it has probably not regained the consequence it possessed in mediæval times, having been the see of a bishop until the Revolution. The ruins of

some large ecclesiastical or monastic edifice have been but lately cleared of the accumulated rubbish of ages.*

These facts suffice to account for the miscellaneous character of the collection, which includes representatives of epochs two thousand years asunder.

Commencing chronologically, the two brass Paalstabs first claim notice. They are in a fair state of preservation, though one has had a recent fracture, and of the average size of these curious but not uncommon instruments of the Celtic period. This kind is always chisel-shaped, but broadens out at the cutting edge—thus more or less answering the purpose of our axes, hatchets, adzes, chisels, gouges, &c.—and must have been invaluable to our demi-civilized ancestors, whether in the construction of the timber-built hut, or the hollowing out of the trunk-canoe.

Of the Roman and later periods the objects are more numerous, comprising—fragments of a bronze sword, which has apparently been about two feet long, engraved on either side with lines, converging towards a point at about the middle of the blade; and two weights or stamps, respectively weighing 7oz. 5dwt., and 5dwt. 4gr. The larger bears the Roman Fasces within a wreath of laurel. There are also the pendent of a belt, (fig. 7) combining with the ornament of an appendage the use of the strap-tag, which has been strongly riveted to the leather, a fragment being still retained between the metallic plates; and the head of a male figure, with a thick, Nero-like neck, (fig. 6); also a more lengthened bust, (fig. 4) of mythological character; the last two have been affixed in ornament to larger objects.

A statuette in silver, (fig. 5) about three inches in height, represents the three-quarter figure of a young boy, probably an attendant at the bath. His right hand is raised in support of some object upon his head, which was doubtless a vessel of oil or water. The attitude is free, easy, and graceful; the expression of the features subdued and thoughtful, yet mild and pleasing.

Among the minor articles attributable to the Romano-British era, are, an ornamental knob, lambent-shaped, and originally gilt; a ring-fibula or

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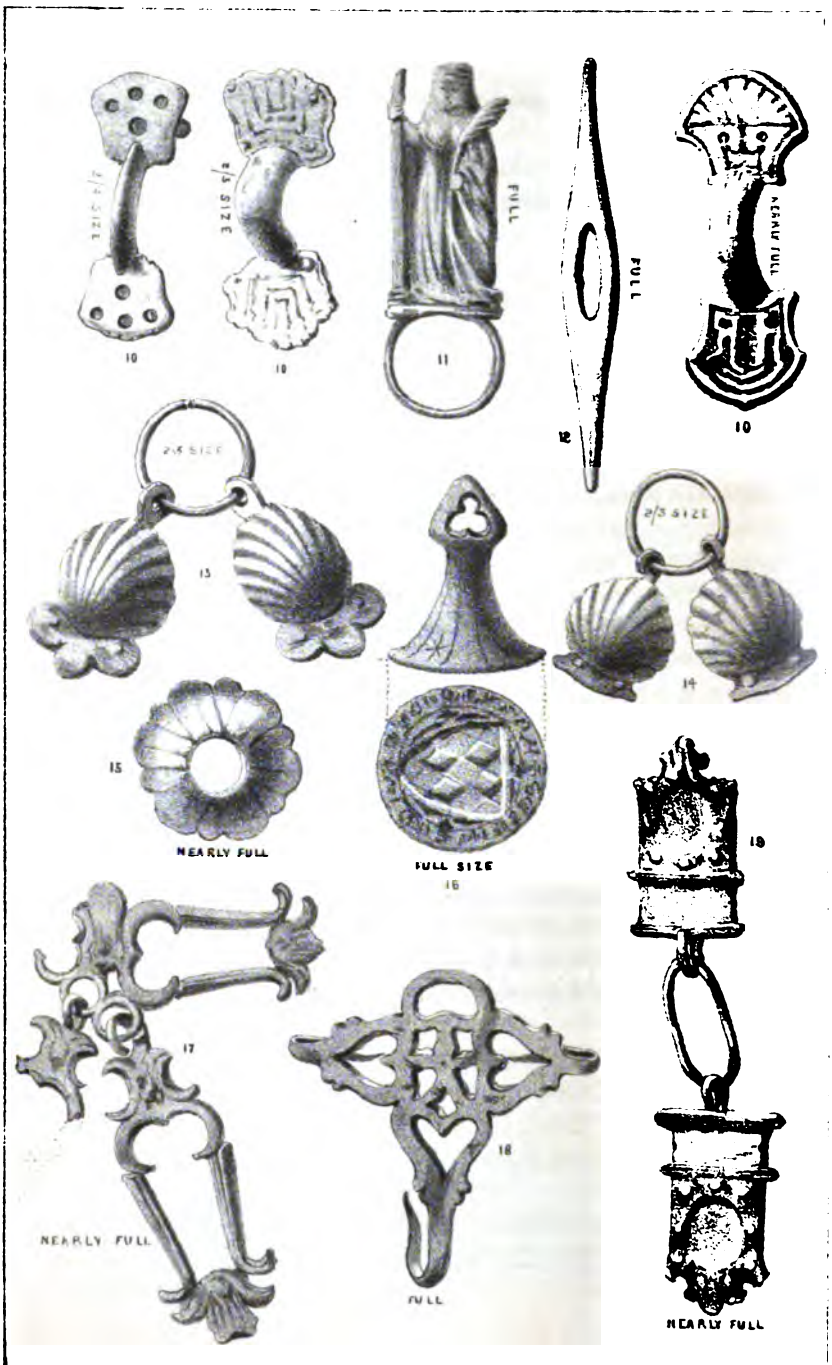
* The town possesses an additional claim to general interest through its connection with the ancient family De Lamartine, whose fine hereditary mansion remains unfortunately in the possession of strangers, despite the persevering efforts of the present representative, the well-known poet-philosopher, to retain his venerated ancestral home. For many interesting particulars relative to the house, town, and locality, see "Memoirs of my Youth," and "The Wanderer and his Home," by Alphonse de Lamartine, (Parlour Library, Simms and McIntyre.)



ANTIQUITIES FROM MACON

brooch; a stout double-pointed needle, with elongated central eye, (fig. 12); a *tintinnabulum* or bell, (fig. 2) precisely similar in form to one found at Springhead, near Dartford, Kent, with other Roman remains, (*vide* Mr. Roach Smith's Collectanea Antiqua, Vol. i., Pl. xli.); a buckle, closely resembling one found on the Cheshire shore last year and now in the writer's possession; and the *scapus* (beam) of a small steelyard, along which the æquipondium (poise) was moved. These objects are all composed of brass or bronze, and two coins occur in connection with them, viz.:—a *second brass* of Faustina Marci, Empress of Aurelius, who died A.D. 178; and a *third brass* of Postumus about A.D. 260.

In three specimens of a peculiar kind of fibula or brooch, (fig. 10) the Frankish (coincident with our Saxon) period is represented. In Britain the occurrence of such is almost wholly confined to the Angles, inclusive of Mercia, East Anglia, and Northumbria. They are usually composed of bronze or brass, and gilt; and their form is often more decidedly cross-shaped than in the specimens before us. A large number found in various parts of the districts mentioned, are illustrated in the Collectanea Antiqua. Evidently rude imitations of the more elegantly moulded bow, or lyre-shaped fibula of Roman execution, they suffer much by comparison with the latter. Two of these ornaments are of brass; the design is uncertain, but bears some resemblance to the outlines of the human face. The third, of lead, is quite plain, with the exception of a few circular indentations for the reception of enamel, no trace of which, however, remains.

Several large rings, swivels and bolts in brass, evidently portions of horse-trapping or harness, evidence by their massive character that long service was designed rather than ornament. The spout of a large brazen vessel, (fig. 3) terminating in the representation of a dog's head, and two bosses, one of which, (fig. 15) is of floral pattern, may all be referred to the early mediæval period, as also several pairs of ornamental links, (figs. 13, 14, 19), and a chatelaine-suspender (fig. 17). Among the coupled links occur well executed designs, including the escallop or scallop-shell, *pecten opercularis*, the recognised badge of religious pilgrimage. Traces of the rivets which served to secure these objects to leathern straps, &c., are yet very noticeable.

The use of the chatelaine, an appendage to female dress combining ornament with use, would appear to have been not unfrequently revived in this country. Probably copying to some extent the Roman examples, our

ancestors early accustomed themselves to the use of this article, and the Saxon graves of Kent and Essex have produced numerous specimens. The objects attached are mostly very small, including pins, skewers, ear-picks, toothpicks, tweezers, rings, scissors, keys, &c. Similar articles of a slightly varied make and fashion, were suspended from the mediæval chatelaine illustrated by our present example. And the custom appears to have been partially revived a century ago, when the great grandmothers of the present generation hung from bright and elegantly designed openwork of steel their fashionable watches and other small trinkets in the precious metals. The last decade, too, has furnished a moderu but by no means sensible instance of an old custom revived, inasmuch as articles of gold, imitating the useful in *shape merely*, are worn for ornament alone. The suspenders are often of steel, and not unfrequently imitations of or adaptations from the better class of those worn in the last century.

In connection with the later monastic establishment before alluded to, and probably exhumed during the recent clearing of the ruins, are, a bell, (fig. 1) three inches in diameter, a key, (fig. 9) and a personal seal, (fig. 16) all of brass, and apparently of about the fifteenth century. The last has a trifoliate orifice in the handle emblematical of the Trinity, and is deciphered S(igillum) Philipe de Losotto. It bears a shield charged with an "ordinary, lozengie or fusillie."

A figure, in brass, of the Virgin and child, has probably been an affixed ornament; it may be referred to about the same period. The crown is tripartite, resembling one upon the head of a female figure in lead, recently found on the Cheshire sea-shore, and perhaps not uncommon at this age.

Lastly come several spoons in bell-metal. Occasionally such shapes are found with figures of apostles at the termination of the handle; hence their ordinary name apostolic. These spoons were in common use in conventual establishments for many successive centuries.

This sketch of his antiquarian souvenir may possibly not merely add to its interest with the owner, but induce other members of the Historic Society who have not hitherto had their attention drawn to the subject, to secure what perhaps occurs frequently to "the roving Englishman" abroad. The objects are illustrative of byegone arts and customs, more or less parental of our own, and consequently deserve zealous preservation.

Fig 1

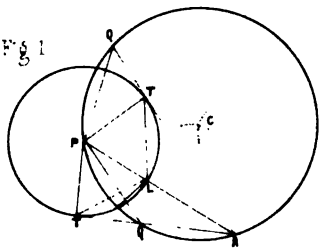


Fig 2.

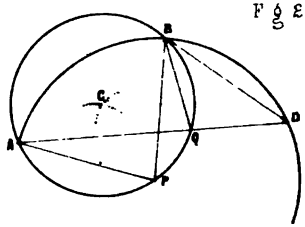


Fig 3.

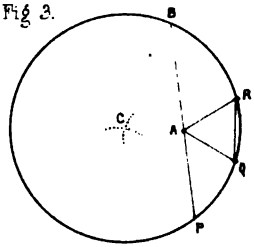


Fig 4

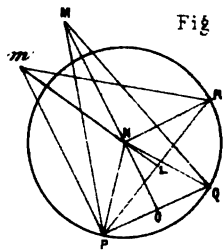


Fig 5.

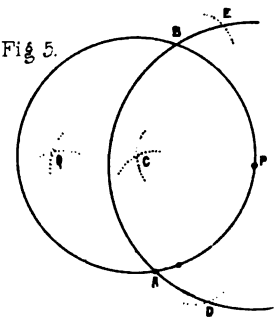


Fig 6.

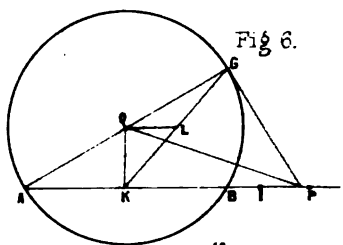


Fig 7.

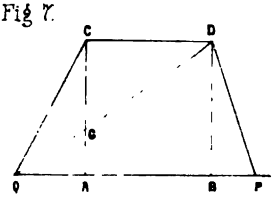
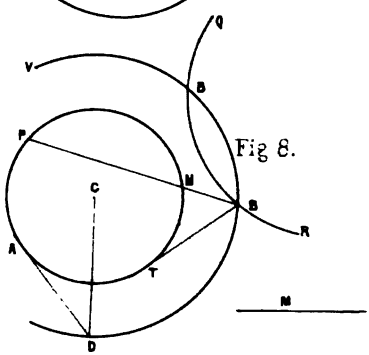


Fig 8.



FURTHER MEMORIALS OF THE LATE J. H. SWALE.

By T. T. Wilkinson, F.R.A.S., &c., &c.

(Read 13th May, 1858.)

In a former volume of the Transactions of this Society I gave a few particulars respecting the life and writings of the late J. H. Swale, and suggested that his manuscripts should be placed under the care of some public body, in order that they might not incur the danger of being lost or dispersed, through the negligence or death of those who possessed them. What I then most feared has, indeed, too soon taken place; for of the many volumes whose contents are there described, *not one can now be traced.* Shortly after the death of the son of their gifted author, I applied for some information respecting them to the present representative of the family; and his reply is to the effect that after the most diligent search he cannot find them, nor is he able to say whether they have been mislaid or destroyed. Mr. Charles Swale has, however, kindly placed in my hands the only manuscripts now known to exist, and as some portions of these appear to be worthy of preservation, I presume an account of their contents will not be unacceptable as a supplementary notice of so distinguished a geometrician.

Manuscript No. I, is a small octavo volume containing about 136 pages. It was begun "June 1st, 1823," and appears to have been completed about "January 12th, 1835." The principal contents are "extracts, original letters, scraps, &c.;" but the volume was once intended for geometrical purposes, since many neatly constructed diagrams occur in several of the earlier pages. His admiration of Milton and Shakespere is evident from the copious extracts he has made from an article in the *Edinburgh Review* having reference to these poets; and there are also some fine passages from *Guy Mannering* in the latter portion of the volume. The political extracts are generally of an extreme character. Like all men of genius he had strong feelings on certain subjects, and did not fail to express himself in plain English when giving an opinion on leading men or passing events.

The poetic element, however, at times predominated, and hence the scraps of poetry to which we shall presently direct attention. He appears to have possessed a correct taste and a just appreciation of the beautiful, both in language and in nature. Some of the extracts in his earlier manuscripts are gems of their kind; but at a later period they partake of the sombre character of that nervous malady which clouded his later years.

On a loose slip I find a few stanzas relating to a more pleasing subject. They bear internal evidence of having been written during his residence at Chester, and possess sufficient merit to render their preservation desirable.

"The River Dee—A Simile.

Transparent, pure, illusive stream,
For ever changing—still the same;
In thee, as in a glass serene,
Man's true identity is seen.
As swift—to ocean's vast expanse,
Onward thy wizard streams advance,
Successive streams their place supply,
And glide in silent swiftness by.
Thus life—which circling years compose,
No fixed, no changeless period, knows;
Onward the fleeting moments roll,
To vast eternity—their goal!
What, though thy lucent current plays
And sparkles in the solar blaze;
Or noiseless as the foot of time
Moves on in majesty sublime;
Or swept by storms, with headlong force,
Proudly pursues its rapid course;
Yet from thy source spontaneous rolls
The stream which time in vain controls;
Fed by perennial streams, below
It flows—and shall for ever flow!
And thus through time's revolving years,
Though life a shifting scene appears,
Yet nature's law unchanged ordains
That man's true self no change sustains;
The mind! – that spark of heavenly flame,
Exists—eternally the same.

From the position which Mr. Swale occupied in the geometrical world it might reasonably be expected that his correspondence would possess more than usual interest—and such is indeed the fact; but, whether from accident or design, very few letters out of the many which he must have written or received have been preserved. The earliest now remaining

bears date "11th September, 1812," and was addressed to him by the Rev. Thomas Cormouls, of Tanley, near Henley, respecting some errors which the writer fancied he had detected in Sir Isaac Newton's philosophy. It appears that the reverend gentleman intended by a few communications to the newspapers to "put the Gravity Cause, or as it should rather be denominated, the *Material Motive Cause*, into the comprehension of every moderately scientific ingenious person."

In a subsequent communication Mr. Cormouls complains that "there is a combination of the whole body of the book trade, and scientific professors" against him; and attributes it to their dislike of "the simple irrefragable exposition of the experiments and natural facts which disprove the adopted system." He contends that the acknowledgement of error is "a hard and indigestible subject," and declares that he "never yet met with a person of great mathematic eminence who did not stand petrified at the proofs of the impostures of Galileo on Projectiles." The writer further enters into an explanation of the theory of the tides and alludes to some pamphlets which he had published on these subjects, and also to some letters which he had addressed to the Editor of the *Liverpool Mercury*, which do not seem to have been inserted. The whole of these letters are certainly curiosities in their way, for the rev. gentleman's method of spelling even ordinary words is not a whit more *orthodox* than his principles of Natural Philosophy. His case is exactly that of one who is too ignorant of the *first principles* of the Newtonian system to be able to comprehend their results; and because these appear to him inexplicable he abandons the whole for a theory more in accordance with his own limited views and attainments.

Mr. Swale himself was not wholly free from this grave error. He had studied geometry to the exclusion of almost every other branch of mathematics; and hence knew very little of the refined calculus upon which the *System of the World* is based. He always doubted the truth of the results deduced from the application of the *Principia* to natural phenomena, and somewhat damaged his reputation by admitting Mr. B. Prescott's letters against the Newtonian philosophy into the last number of the *Apollonius*. Several of the subsequent letters in order of date are addressed to him by Mr. John Whitley, editor of the *Leeds Correspondent*, and one of the ablest geometers of the day. Mr. Swale had desired to have his "understanding

enlightened" respecting the notation employed in question 154 of the *Gentleman's Companion*, which had been proposed by Mr. Whitley, and he now explains certain doubtful matters on the supposition that the querist "is not in jest." The letter then proceeds to state that Mr. Butterworth's solution to question 117 of the same work "is false," seeing that "the inference which is drawn in the nineteenth line of the solution does not follow from what has gone before, nor can it be proved to be true." It concludes by offering the following questions for Mr. Swale's consideration.

QUESTION I.

"If the vertical angle of a triangle be fixed at a given point and the sides about that angle have a given ratio; then if one of the angles at the base move along a right line given by position and the base make with that line a given angle, it is required to define the locus of the remaining angle."

QUESTION II.

"Given the vertical angle, the length of a line drawn from one of the angles at the base to the centre of the inscribed circle, and either the sum or the difference of the base and one of the sides, to construct the plane triangle."

The next letter merely contains an explanation of a delay which had occurred in the publication of the *Leeds Correspondent;* but in a subsequent communication Mr. Whitley remarks that "after a sound sleep of seven months, it has once more made its appearance." The Prize of six *Correspondents*, it seems, had been awarded to "Mr. Whitehead, of Huddersfield, by mistake, as it fell by lot to Mr. Johnson," who was thus deprived of his honors by a typographical error! Mr. Swale's name appears amongst the proposers of "new questions," but how it came there Mr. Whitley must explain. He says "I have taken the liberty to propose, in your name, the following problem which you will not find involved in much difficulty, viz.: To inscribe a triangle, given in species, having its angles posited in the circumferences of three given concentric circles." The solution of this, and also some points in its history, may be seen in my *Essay on the Ancient Geometry*, p. 88, Vol. VIII., of these Transactions.*

* When I wrote the "Notæ Mathematicæ," Nos. II. and III., in the *Mechanics' Magazine* for 1854, and also for some time after the publication of my paper on "The Ancient Geometrical Analysis," in Vol. VIII. of these Transactions, I was of opinion

An intimation is then given respecting the intended Prize Questions for several succeeding numbers of that periodical; the transit of Mercury over the Sun's disc in 1832 was beginning to attract attention, and the *Leeds Correspondent* contains many interesting particulars relative to that event.

During 1823 and 1824 Mr. Swale was engaged in publishing the *Liverpool Apollonius*, and his manuscripts contain several letters to Mr. Dickenson, a correspondent of that able work. In one of the earliest of these he says:—"I had the pleasure of your note and your mercantile propositions. On looking through them, they bring to recollection something of the same kind, though on a comparatively limited scale, which I, some years ago, presented to the late Mr. Rutson, who had asked me the common-place, vulgar question, 'of what use is Algebra?' You have bestowed considerable labor upon them, and they do you credit; but, with respect to *profit*, you must, like Goldsmith, draw upon posterity." Another communication to Mr. Dickenson has reference to an error which the latter had corrected in the *Nautical Almanac*; and it also appears that there were then some thoughts of appointing an Astronomer to the port of Liverpool. Whether that project was carried out at that time or not I am unable to determine, but Mr. Swale thus expresses himself on the subject.

"I have not yet been able to attend to your correction by reference to the Nautical Almanac . . . . . I heard amongst the *literati* that you were a candidate for the post of Astronomer-Royal to the Royal Institution of the *Royal* town of Liverpool. . . . . If any bread and cheese hang by this tale of Astronomer, I heartily wish you success." Both the "correction" and the "mercantile propositions," here alluded to, may be seen in the *Apollonius*, No. I., pp. 97–102.

The first number of that work was dedicated to Professor Leybourn, of the Royal Military College, Bagshot, and a letter dated "6th January, 1824," contains an acknowledgement of the compliment. He is glad that Mr. Swale approves of the *Gentleman's Diary*, and inquires respecting the continuance of the *Quarterly Visitor* published at Hull. Mr. Cunliffe, the.

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that a solution of the *general* problem was a *desideratum*, and considered Mr. William Shepherd, of Bradford, entitled to the honour of having first supplied it. Since then I have found that M. Plateau constructed the case when the triangle is equilateral in Tome III., pp. 1–2, of M. Quetelet's *Correspondance Mathématique et Physique* for 1827, and the general case for any triangle is very elegantly constructed and demonstrated by M. Gerono in pp. 225–226 of the same volume.

elder, it appears, retired from the College in October, 1822, but had not been succeeded by his son as was expected.

In June, 1825, the late Professor Davies wrote to Mr. Swale from Bristol complaining of the difficulty of procuring the *Apollonius*. He alludes to the celebrated problems on Tangencies, and the probability of his publishing a work on the subject. A paper on the Quadrilateral is also mentioned, which was afterwards published in the *Philosophical Magazine* for August, 1826, but I do not find that he ever completed his intentions with respect to the problems of Taction. Mr. Whitley had just published "a course of inquiries into certain series for circular arcs in the *Mechanics' Magazine*," which Mr. Davies remarks "are curious and certainly will be of use in the summation of series, whether finite or differential;" but the author *(Sigma)* of an article in the *Philosophical Magazine* for May, 1825, entitled "an outline of general methods in developing certain extensive classes of formula," is not so fortunate as to merit the commendation of so competent a judge in these matters, for he says—"I shall in a future number of that work meet both his and a number of other objections. I think I shall be able to show that the analytical methods are the *tentative* and not the geometrical. In truth the principle of generalisation upon which the extensive methods of the modern analysis are founded, seems to be very imperfectly understood even by the best analysts, just as the *nature of geometrical certainty* is often completely mistaken even by geometers of the greatest celebrity. The nature of the first principles of geometry seems to have been inculcated by no mathematician of eminence except Professor Leslie, and he is altogether the follower of the late Dr. Beddoes, who, as Playfair sneeringly remarked, 'was no geometer.'"

The worthy Professor was ever ready "to do battle" for the superiority of geometrical reasonings, and the truth of his positions has since been amply acknowledged by the gradual adoption of his views by the authorities at Cambridge, Oxford and Dublin. At a later date Mr. Davies again inquires respecting the *Apollonius*, and refers to some of his own papers in the *Philosophical Magazine*, and in the *Repository*, as indicating the tendency of his studies. The works of Monge appear to have attracted his attention, and he proposes for solution the following, as an extension of one of the "beautiful theorems" due to this great continental geometer.

QUESTION.

"In any conoid let three sections be made; and cones envelope them two and two in every possible combination (it is of course to be proved previously that *any two sections* are capable of being so enveloped), the six summits will lie three and three in a straight line, and all six will lie in the same plane."

A short letter from Mr. William Wright, another able Yorkshire geometer, merely announces that he has sent a remittance for the sale of a portion of the *Apollonius* and the *Geometrical Amusements*. Its contents offer no points of interest; but the same cannot be said of one dated "July, 1831," from Mr. Swale to Mr. Michael Fryer, editor of Lawson's *Analysis*, Ludlam's *Mathematics*, and Simpson's *Geometry*. He there states that he commenced operations at Liverpool, with "two youths," but ultimately succeeded in "raising a school of 150 pupils, and had a prospect of realizing an ample competence." Too close confinement, however, "and ceaseless labour proved too much for [his] oaken constitution." An "alarming, incurable laceration of the entire nervous system" was the consequence; and this "illness, with its various collaterals, cost [him a large sum] besides imposing upon [him] the necessity of closing [his] establishment."

During 1835 he received a long communication on the state of things in America from his friend Mr. Reston, and in reply he takes occasion to express his political feelings in rather strong terms. In a postscript he desires to be remembered to Dr. Adrian, Professor of Mathematics in Columbia College, New York, to whom he had many years before dedicated the second number of the *Liverpool Apollonius*.

Professor Davies was again in correspondence with Mr. Swale, during 1835. He was then contemplating a "History of Geometry," in which he proposed to acknowledge the deep obligations under which he had been laid by "the excellent models of geometrical research" contained in the *Amusements*, and in the various periodicals to which Mr. Swale had contributed. The *Diaries* he confesses had "sadly fallen off from their olden form and old intrinsic excellence in Geometry;" "but," he continues, "I trust that in other things they have kept pace with the times. The taste is suspended —not lost—for Geometry; and I am not without hopes of living to see, without looking for a long life too, the wheel turn round, and a pure geometrical taste again in the ascendant. I may misread the times, but

I think still that my augury will prove right." In the latter portion of the letter he urges Mr. Swale to continue the *Amusements*, and requests a solution by means of their principles to the following

PROBLEM.

"Four angles are given in magnitude and position, or the right lines which contain them more properly, viz:—A, B, C, D,—it is required to draw two straight lines a b c d, and *a b c d*; to cut them so that the lines *aa*, b*b*, c*c*, d*d*, shall all be parallel to the same given line."

Mr. Swale died in the early part of 1837, of an attack of influenza, brought on by exposure to the weather whilst attending a friend who was embarking for America. It was generally understood that he had left a considerable number of manuscripts, and in 1838 Professor Davies inquired through Mr. Samuel Jones how the family intended to dispose of those which might be found ready for publication. He considered that "the succeeding parts of the *Amusements* would have been an invaluable addition to mathematical Literature," and asked "whether it would not be possible to draw up something in the shape of a Life of Swale, since it is a tribute which we ought to pay to genius like his." This inquiry terminated in an offer on the part of Mr. J. H. Swale, junior, "to entrust the principal portions of the MSS. to [Mr. Davies's hands] and confiding to [his] honor for making such use of them as would most effectually secure to (the deceased) any merit they possessed:"—a proposal which was declined by Mr. Davies on the ground that he was then "engaged upon three different undertakings" of a literary and scientific nature."

Two of the works projected by Mr. Davies proved to be abortions; the "key to Hutton's Course" made its appearance in 1840, but the sale of this, although excellent of its kind, did not justify the publication of the others.

Just before his death I find Mr. Swale in correspondence with a young Hindoo, who had been engaged in the Trigonometrical Survey of India. This gentleman appears to have been of opinion that he had made some important discoveries in pure Geometry as applied to Geodetical problems; but on examination I find they are merely variations of Prob. xxv., p. 221, Leslie's *Geometry*, or of Hirsch, sec. liv., p. 81, when the point C is within the triangle A B D; although "a Prize of 100 rupees had been awarded him by the authorities connected with the survey."

Amongst a considerable quantity of loose papers sent me along with the MSS., I find little besides examination papers which had been drawn up for the use of private pupils. Most of them contain selections of questions in elementary Arithmetic, Mensuration and Algebra, and are therefore of little value; but the following scraps on Geometry appear to be sufficiently *original* to merit preservation.

THEOREM.

Let A P be any chord in a given circle; describe a circle to centre P and diameter A P; to which draw a tangent from A cutting the given circle in Q and join P Q:—then is P Q the radius of the given circle. (Fig. 1.)

DEMONSTRATION.

Let PA cut the circle to centre P in L, and draw PT, LT. By the hypothesis PA = 2PL = 2PT; or PL = LA = PT, and the angle PTA = a right angle. Then LT = LA = LP = PT; or the triangle LPT is equilateral; that is the angle PAQ = one third of a right angle; or PQ is the side of a hexagon inscribed in the given circle. ∴ PQ is the radius of the given circle. Q. E. D.

Hence is deduced an original and elegant method of determining the radius of any circle when the centre is *not* given.

CONSTRUCTION.

Assume any point P (*Fig.* 2.) in the periphery of the given circle, from which as centre describe *any* circle cutting the given one in A and B; inflect BD = BP, and draw AD cutting the given circle in Q:—then QD is equal to the radius of the given circle.

DEMONSTRATION.

Draw PA, PB, PD, PQ and QB.

Then by the circle and equals we have the angle PBQ = PAQ = PDQ; and since the triangle PBD is equilateral, the angle PBD = PDB or the angle QBD = QDB; and ∴ QB = QD;—that is, PQ is perpendicular to BD, and bisects the angle BPD. Q. E. D.

OR THUS:—

Take any equidistant points P, Q, R, (*Fig.* 3); and through A, the

vertex of the equilateral triangle on QR, draw PAB. Then AB is evidently the radius of the given circle.

THEOREM.

Take any points, P, Q, R, in the periphery of a circle; draw to *any* points M, m; PM = QM, and Pm = Rm; and let MN, mN, bisect the angles PMQ, PmR:—then N is the centre of the circle. (*Fig.* 4.)

DEMONSTRATION.

Join P, Q; P, R; and let MN, mN, meet PQ, PR, at O and L.

Because PMQ; PmR, are *isosceles* triangles, and MO, mL, *bisect* their vertical angles; OM, Lm, bisect the chords PQ, PR, perpendicularly, at O, L; ∴ N is the centre. Q. E. D.

OTHERWISE.

Draw NP, NQ, NR.

The triangles MPN, MQN, having MP = MQ, MN common, and the angle NMP = NMQ, are mutually equal; or NQ = NP. For similar reasons, the triangles mPN, mRN, are mutually equal; or NR = NP. Hence NP = NQ = NR; and consequently N is the centre of the circle. Q. E. D.

Hence the following remarkably simple and elegant method of determining the centre of a given circle by means of the compasses only.

CONSTRUCTION.

Take in the periphery any equidistant points A, P, B, (*Fig.* 5.); describe arcs from A, B, with radius A P, intersecting in Q: from Q, with radius Q P, cut the circle through A, B, to centre P in D, E; then arcs from D, E, to radius DP, intersect in C the required centre.

The second of these Theorems was proposed, but not answered, in the last number of the *Liverpool Apollonius.*

Manuscript No. II, is a small quarto volume containing "A course of Promiscuous Problems, with original modes of Determination." In the whole there are about twenty-nine consecutive geometrical problems of various degrees of difficulty, besides others on isolated subjects, and nine on the Problem of Tangencies as treated by pure Geometry. Nearly the whole of these are fully analysed, constructed, or demonstrated, as the case may

require; and the majority would probably have been included either in the *Apollonius* or the *Amusements* had those works been continued. The limits of the present notice preclude the possibility of my making any lengthened selection of the contents in illustration of the methods of solution adopted by Mr. Swale;—but this omission may be supplied on future occasions when I propose to arrange and classify some of the most important problems, and offer them with a few connecting links of my own for the acceptance of this Society.

The opening problem, however, may be selected as a specimen, and it will also serve as a variation in the modes of treating the second proposition in the *Geometrical Amusements.*

PROBLEM.

To a given line to add another line, such, that the rectangle under the whole and the part added, may be given.

CONSTRUCTION.

Let AB (*Fig.* 6) be the given line; and AI the side of the given square.

Describe through A, B, a circle of any magnitude, from the centre Q draw QK perpendicular, and QL parallel to AB, making QK : QL : : IA : QA; produce KL to the circle at G and draw GP a tangent at G :—the required line is BP.

DEMONSTRATION.

Join QG and QP.

The points P, K, Q, G, are in a circle; or the right angled triangles PGQ, KQL, are equiangular, having KQ : QL : : PG : GQ : : PG : QA : : IA : QA. Therefore PG = IA, the side of the given square, and PA. PB = PG^2. Q. E. D.

OTHERWISE.

Let DC (*Fig.* 7.) the given line, and CA the side of the given square, be perpendicular to each other; and also AQ parallel to CD. Draw DGQ making CG : AQ : : CD : CA, and the required line is AQ.

DEMONSTRATION.

Join CQ, draw DB, DP, perpendicular to DC, DQ, meeting QA at B, P.

By composition DC : CG : : CA : AQ, or the angle QCA = CDG =

PDB. $\therefore$ QA = BP; that is, (QA + CD). QA = QB. BP = BD^2 = (by the circle) AC^2, the given square.. Q. E. D.

The elegance of these investigations is too obvious to require any comment; but their *simplicity* led Mr. Swale to add the following note as an apology for their insertion :—" This apparently trifling problem *is of singular utility* in construction, and has received the notice of most of the elementary writers; the ardent geometer will not be displeased with the attention I have paid to it in the third part of these *Amusements*." Its connection with *Euclid* iii, 36, is seen at a glance, and it may be here observed that the problem becomes *indeterminate* when AB is the diameter of the circle ABG. As a neat application we may select the following

PROBLEM.

The circle ATH (*Fig.* 8), the curve QR of any order, and the point P, in the periphery of the circle, being given in position; it is required to draw PB cutting the curve QR in B, so that PB. BH shall be equal to a given square, M^2.

CONSTRUCTION.

From any point A in the circle ATH, draw the tangent AD = M; to center C and radius CD describe a circle cutting QR in B, and draw the required line PB.

DEMONSTRATION.

By the circle, PB. BH = BT^2 = DA^2, (because of concentric circles) = M^2, the given square. (*MS. No.* iii, *p.* 49, *bis*). Q. E. D.

This construction and demonstration appear to be due to Mr. J. H. Swale, junior, since they occur in his portion of the volume about to be described.

Manuscript No. III, is a large folio containing about 360 pages. The first 55 of these are devoted to the consideration of a series of " General Problems " in geometry; several of which may hereafter find their way into these Transactions. Nearly the whole are fully constructed and demonstrated; the several cases of each are mostly indicated by neatly constructed diagrams, and occasionly are treated " otherwise " with much elegance and variety. The enunciation of the first will suffice to indicate their nature.

PROBLEM.

The lines CQ, CR, and the point P are given in position; to draw

through P, the right line PQR, so that the sum, difference, or rectangle of CQ, CR, may be given.

The last 228 pages of the volume are numbered consecutively, and contain "solutions in Algebra and Geometry, by J. H. Swale, junior." This portion was commenced, "10th February, 1830," and was continued at intervals up to the time of his obtaining a situation as clerk in a Liverpool Bank.

Most of the Algebraical Problems are selected from the works of Bonnycastle and Bland, but there are a few from other sources, to which original solutions are occasionally given both by father and son. In pages 3 to 25 we find a few easy problems in "Cyclometry," or the construction of geometrical problems *by means of the compasses only;* they were probably intended as easy exercises for scholastic use. The geometrical solutions commence on page 17, and are continued alternately with Algebra up to page 121. "A series of problems exemplifying the application of Algebra to Geometry" is then commenced, which occupies alternate pages up to 159, when the copying becomes irregular and consists of Algebra and Trigonometry as occasion might require. So far as I can judge, the majority of the geometrical questions are selected from those which Professor Bonnycastle appended to his Treatises on *Algebra* and *Geometry*, but the methods of solution are characterised by that elegance and originality which pervades the whole of Mr. Swale's geometrical writings. Even in the consideration of the simplest problems and theorems the hand of the master is apparent; and although the majority of the exercises prepared for his son are necessarily elementary in their character, a selection of solutions of considerable value might be made from the manuscript now under review.

On the present occasion I shall content myself by extracting *three* elegant constructions to the problem of "drawing two lines AC, BC, from two given points A, B, to intersect in a right line DK given in position, so that their difference shall be given."

FIRST CONSTRUCTION.

"From the given points A, B, draw AD, BK, perpendicular to DK, the line given in position; draw BR touching the circle to centre A, and radius equal the given difference. Make 2DA : BR : : BR : BP; and the tangent PQ, to circle (A), determines the position of AC and BC."

Second Construction.

"Draw BK perpendicular to DKC; take KA. AR = KI. KL; in the circle through R touching CK at K, apply, through A, PQ = 2BK; then the line PQ determines C, and thence the position of AC and BC."

Third Construction.

"Draw BK perpendicular to DKC; make $KR^2 - RA^2 = BK^2 - AL^2$; draw RP perpendicular to AK; then the tangent PQ to the circle having centre A and radius AL = given difference, determines the position of QC or AC."

The demonstrations may be supplied by the geometrical reader.

It is my intention to transfer the three volumes here described to the Library of this Society, as soon as I have made the selections indicated in the course of this supplementary notice. They may thus escape the probable fate of those described in my former memoir, and serve as a slight memorial of one of the ablest geometers of the times in which he lived.

A HISTORICAL SKETCH OF PHOTOGRAPHY.

By Charles Corey, Esq.

(Read 13th March, 1858.)

To attempt the description of an art, the particulars of which are as "familiar" in every one's mouth "as household words," would, it is to be feared, involve the tedium, not merely of a twice-told, but oft-repeated tale; still, though many here are doubtless already conversant with it in most, if not all of its branches, a brief history of its rise and progress may not be wholly uninteresting. Solomon said "there is nothing new under the sun." I think he was not a photographer; certes, though we cannot carry the knowledge so far back as that, the action of light on most of the salts of silver was known to the ancients, the native chloride or horn silver, called by philosophers Cornus Lutea, being most perceptibly affected by the action of light. But notwithstanding the early date of these observations, there is no record, prior to 1722, of any experiments at all calculated to apply this chemical effect to use. Shortly after that date, a Swede named Scheele discovered that this same chloride, when spread upon paper, was speedily darkened by the blue rays, whilst the red produced little or no change. In 1788 Count Rumford communicated a paper to the Royal Society, called "An inquiry into the chemical properties that have been attributed to light." His experiments, however, were carried out upon gold, more costly but not so susceptible as the subject of our previous remarks, for this is so pre-eminently sensitive as to supersede all other material.

In 1801 Ritter of Jena repeated the experiments of Scheele, and demonstrated the existence of solar rays possessing great chemical power, whilst producing little effect on the organs of vision. In the same year Labillardiere elaborated some previous experiments of Dr. Priestley, and elicited that not only were plants influenced by light in the respective gases thus emitted, according to the Doctor's theory, but that also plants, blanched by being grown in the dark, had no pores, and that cresses, &c., grown under artificial light have only half the number of pores, compared with those grown in natural light. Numberless other experiments followed, which served to confirm the now universally admitted chemical agency of light; but the most important were by Mr. Wedgwood and Sir Humphrey Davy in 1802. They published a description of a method of copying paintings on glass and making profiles by the action of light on nitrate of

silver. This was certainly the first published statement of any attempt to procure images by the decomposing powers of light. Their account is that with which we are now so familiar, viz., the blackening of the salts of silver in combination with an organic substance when exposed to light. Their efforts were carried out upon white paper and white leather, and gave, of course, very faithful representations in reverse, of everything that was laid over them so as to intercept the rays that fell upon them; but alas, the magician that called this wonder-working power into life possessed not the cabala to arrest its progress; the mystic representations pursued their nigrescent course till all vestige of the much-coveted but fleeting image was absorbed in a universal blot. The failure of two men so eminent, appears to have discouraged all further attempts in England for a long period.

In 1814 M. Niepce, of Chalons, pursuing researches on this subtle agency, was led to remark the property of light in altering the solubility of many resinous substances, and here laid the foundation of the art of engraving by light; very accomplished specimens of which are now before us. Ten years after, M. Daguerre was united with him in a series of researches, and in 1829 they entered into a partnership, to pursue their studies for their mutual benefit. M. Daguerre, however, appears to have been dissatisfied with the slow progress of this method. In 1831 M. Niepce hoped for great success by the use of iodine, but must have had very imperfect ideas of its efficacy, for we find him regretting that he had lost so much time with it. "I do not see," he says, "any greater advantage than from the use of other metallic *oxides*." He having died, M. Daguerre seems to have found its virtue in the evanescent property that iodine evinces when exposed to light, for he published his process in 1839, certainly the first known as manageable in the camera obscura.* This discovery of Daguerre was so highly estimated by the French Government that they rewarded his efforts by a pension of 6000 francs for his life, with a reversion of half that sum for his wife.

M. Daguerre's success induced Mr. Fox Talbot, who had been experimenting with the chloride of silver, to make known the result of his labors; which appeared in the *Philosophical Magazine* of the same year. He there gives directions for the production of both negative and positive images, and indubitably has established a fair claim to be considered the father of the method of printing on paper.

* That admirable invention of Baptiste Porta, who conceived the idea from seeing the objects in the street outside represented on the walls of his dark chamber, thrown by the rays of light pouring through the lenticular opening of a hole in the shutter.

But all these cunning devices were of little avail until Sir John Herschel published his paper, read before the Royal Society, "On the use of liquid hyposulphites for fixing the photographic impressions." This was followed by Mr. Robert Hunt in 1840, proving that the iodide of silver was much more susceptible than the chloride. Who can say how much he had been brought to the conclusion by the fact of M. Daguerre's pictures being obtained by the vapour of iodine brought in contact with the polished surface of a silvered plate, thus producing a crude iodide of silver?

Wondrous as this must have appeared to all who beheld it, it would seem extremely clumsy to our more occult and highly trained ideas at present, for I remember the sister of a friend of mine sitting under this magical process, as it was then supposed to be, for full ten minutes, in the bright blaze of a midsummer sun, until she no longer appeared herself, but a perfect "Niobe all tears." Early in the following years that process was farther advanced by an Englishman, a Mr. John Goddard, who, by discovering the accelerating effect of bromine, a subtle and noxious radical found in seasalt and other compounds, quickly reduced the operation from minutes to seconds. This process reigned without a rival for about ten years, and most beautiful results have been elicited from it; but our subsequent experience only makes us regret that they are so perishable.

It being now generally admitted that these phantasma owe their origin to the changeable character of the salts of silver, a more chemical means of bringing them under the influence of the master spirit, Light, became very generally sought after. Having seen the comparative readiness with which they might be spread upon paper, a more transparent medium was much to be desired, and a viscid and glairy liquid such as the white of an egg, scientifically called albumen, was generally used in France, spread upon plates of glass and rendered sensitive by immersion in a solution of silver. But the crowning effort was due to Mr. Scott Archer, who found that gun cotton, when dissolved in æther and charged with the needful salts, gave such an even, transparent surface, that by the subsequent addition of agents that precipitated the metallic silver, the picture was formed by it on those parts of the plate previously acted upon by light.

We have here pre-supposed all present to be perfectly cognisant of the precise forms by which these various processes are accomplished; but for the uninitiated we may state, that in Daguerre's method the iodide of silver was formed in the dry state by the ready deposit of a film from the vapour

of iodine on the metallic silver. This being partially denuded by the action of the light, rendered it easily attacked by the vapour of heated mercury, which deposited itself in just proportion as the lights or shadows had been deflected on the plate. In the more recent process the same salt was deposited on the plate by the collodion containing iodide of silver, and then, being immersed in a solution of nitrate of silver, the double decomposition produced the necessary iodide of silver with a little nitrate in addition. The consequent deposit of metallic silver by the operation of the needful reagents forms the picture.

We have now traced the art through all its conditions as merely forming a philosophical toy; but the almost forgotten labours of M. Niepce have not been without bringing forth good and useful fruit. His researches have been taken up by his nephew, M. Niepce St. Victor, and have brought about far more utilitarian results than those we have been considering. By the action of light on the finer resins of asphalte, there is little doubt that in time light will be enabled to engrave its own reflections.

A German named Pretsch has found that light acts upon gelatine when combined with bichromate of potassa; this forms a surface sufficiently uneven for a layer of liquified gutta percha to be spread over it, which forms an intaglio that serves as a matrix for the deposit of a sheet of copper by the electrotype; but being in relief, a second sheet has to be again formed, having hollows similar to an engraved copper-plate, that hold the ink and preserve these gems of art.

I conclude this brief outline by quoting the panegyric of a recent writer. He says, "By the aid of photography every one may become an artist, and when it is remembered that we are enabled in a few seconds to copy the most extensive architectural pile, with all its details of elaborate tracery; to preserve faithful pictures of those English shrines made holy ground to us by the sacred memories which cling to their crumbling walls; to possess ourselves of the most truth-telling representations of those mediæval relics fast mouldering under the imperative touch of slow-wasting time—which stand in their desolation like the embodied past, eager to instruct the present and guide to an enlightened future; and when, in addition to all this, photography is found to furnish the best studies of perspective, to preserve gradations of light and shade in their natural beauty and consistency, it will require no argument to convince every one of the real value of this beautiful art."

ON THE GEOLOGY OF THE FYLDE DISTRICT.

By the Rev. W. Thornber, B.A.

(Read 13th May, 1858.)

Without any premising, I shall enter at once upon my subject by saying, that however the scientific disagree about the subdivisions of geology, they recognize six large divisions, each of them distinctly separated by a "disturbance," viz., the elder and later primitive, the elder and later secondary, and the tertiary with the recent surface of the earth. In the subdivisions of the tertiary system I shall attempt to class the district of the Fylde. My first step, therefore, will be to describe briefly its predominating features, and then to test the characteristics of our neighbourhood by them.

These deposits lie in the hollows or basins of the secondary rocks; whilst their strata are precipitated in nearly a similar manner to those at the mouths of our present estuaries. They link together the past and the present, gliding through the subdivisions of the Eocene, the Miocene, and the Elder and Newer Pliocene. Marl and clay deposits are predominant, and these being eroded by currents at the bottom of the sea, are filled up with shingles and sand, which are now recognised as the remains of elevated sea beaches, at times very extensive, and frequently forming conglomerate or plum-pudding stone with ferruginous breccia. Intermixed also with these strata are layers of fresh water deposition. The fauna disclosed are all more or less intermixed throughout, the extinct with the recent, or are identical with those that now people our shores.

The first feature of the tertiary group is their formation in basins of the secondary rocks, whence they receive the materials that compose their deposits. In such a hollow the upper strata of our district have been precipitated. The following facts suggest that new red sandstone, if not eroded, lies at the bottom of the basin. This formation is of great extent. It fills the basin of the Eden from the neighbourhood of Brough to the Solway Frith; it is seen at St. Bees Head, on the banks of the Duddon,

and the western heights of Low Furness. At Cockersand, however, it crops out, and again exhibits its dipping. At the Wyre the basin is deep or is totally abraded, which is doubtful, as it reappears in the bed of the Ribble and thence runs forward through Cheshire, and from the mouth of the Tees to that of the Severn. It is, however, a mistake to suppose the red sandstone to run to the foot of the Pennine chain. At Garstang and Ellel, &c., the rock is of a grey and coarser material, as well as harder, and is neither red sandstone nor the grit of the fells. My supposition, therefore, is that the deposits of our district lie on a floor of red sandstone. Of the presence of coal beneath I will say little. I shall only record that when Professor Phillips surveyed the land at the mouths of our estuaries he pointed to the Fylde as most promising; but at the depth of no less than four hundred yards were we to expect it. And his supposition is not unreasonable, since coal pits were worked by Thos. Tyldesley, Esq., in 1712, at Ellel, and a seam of it at the Bay Horse, near Garstang.

The lowest stratum which manifests itself as a section at Blackpool cliffs is a deep deposit of brown till. Its vast aggregate is not entirely manifested, and much of its mass sinks below the level of the shore. There is enough, however, to describe its characteristics, though not its depth. It is literally laden with stones, like plums in a pudding, so much so that at the base of its disclosure "they constitute fully one-third of the whole." These lie every side up, topsy turvy, in all directions, some standing on their edges, others on their sides, and some again on their flat surfaces. They are sometimes intermixed with huge blocks of granular and fibrous gypsum, and their average size is greater than those in the upper beds; whence we may suppose that the masses of granite, greenstone, limestone, &c., which stud the shore are for the most part the product of this deposit, though there are others as large, lying on the tops of the hills in every quarter. One difference between the boulders in this stratum and those in the superior ones the observer cannot fail to see. They are not so much rounded, though originally torn from the same rocks; whilst more than one-half here are so, wholly or in part. Besides, says Binney, there is scarcely "a slate of a few inches diameter, or a carboniferous rock, without some marks of striæ upon it, nearly always running parallel to the major axis of the stone." Of course the porphyries and greenstones, on account of their hardness, have fewer marks of scratchings upon them.

Such is the lowest deposit of which we have a section, and this to the depth of sixty feet. It carries all the appearance of a raised sea bottom, which after the reception of debris and reproduction of its families of shells, from time to time was overspread with loads of boulders and gravel, that sunk into its soft mud.

The next bed above this till is of a red, stratified, pliable and silty loam, which originally had been precipitated in an horizontal line, from the fact of this deposit being always about the depth of three or four feet, except where it had filled up to the level the eroded hollows of the till on which it lay. It is much twisted and contorted by the heaved up mass beneath. At a glance you perceive how, where it appears, its two anticlinal axes receive the synclinal deposits of the upper beds. Its medium depth is about, as I said, three feet; but it expands or diminishes gradually, whether it rises from the south, or falls to the north, as it draws near, or receives the superior strata of sand and gravel. In fact this layer of loamy sand may be called the base of all the gravel and loose sand deposits throughout the country,—at Preston, Kirkham, Poulton, Marton, and elsewhere. We say that it was formed under water from the presence of boulders and sea shells. I have also detected within it much riddle stone and iron dust, very soft and discolouring the fingers. One thing is remarkable; whilst its top is converted into a thin layer of sandstone, the whole is cased above, as it were, with a single row of boulder pavement or a dark ferruginous breccia, and beneath by a baked, glaze-surfaced and slate-coloured lamina of fresh water silt, hard and leafy, and which evidently had been washed down from higher ground upon a sea beach and sands which the tide was leaving.

The next deposit especially demands our attention, as it alone contains the reservoirs whence we draw water, and consists of those calcareous and aluminous sands which render certain lands so productive. Here opens a wide field for a better geologist than myself. The chief body, however, of this deposit appears to have been a brownish coloured till, at least primary, and may have been most extensively abraded by currents when a sea bottom, as it is entirely abraded or widely intersected with hollows, so deep and long, that the beds of red and grey sand and gravel which fill them up rest on the red loamy silt we have been describing, and miles of country are occupied by them. These materials, whilst distinctly separate, are strangely inter-

mixed. In the space of Poulton market-place we meet with beds of marl, loam, grey and red sand and gravel in close position and near the surface, yet not mixed in an incoherent medley. This must be the result of agencies. We must forego the old cherished idea that the deluge effected this, as well as deposited the whole mass of diversified strata. Had it done so, what a jumblement of matter would there have been! Whatever may have been the modifications produced on the surface of the globe by that catastrophe, they must be discarded here. What then were the agents employed? Internal heat, the wave and probably wind. Compare the deposition and different characteristics of the grey and red sand and gravel. These whilst they lie above one another, beneath one another, under clay and marl, and very frequently cap the summit of our hills, have yet all been precipitated in layers thinner or deeper according to the periods of the year when the swollen stream was heavily surcharged with matter, or was clear and placid. We may see nature still at the same work on the estuaries of the Ribble and Wyre. The currents of the flowing tide being laden with silt, sand, &c., meet at right angles the stream of the Ribble, likewise surcharged. This encounter causes both to drop their burdens, which the wave spreads out in strata, as an inspection of the sides of the Horse-bank channel demonstrates. Besides, whoever is desirous of witnessing how smoothly for miles the wave and its currents can deposit shingle, may be gratified by such a sight near the Fleetwood piles. A gardener could not rake his walks more carefully. But I must look more narrowly at these sands and gravel. Inspect first the grey coarse sand. This is nearly altogether composed of well-rounded quartz, some soft matter and perfect and comminuted shells. It is intersected with beds of shingle, which form a thin scattering beneath or above, and gradually become deposits of greater or less depth. How thinly the laminæ of this sand may be laid, you can perceive by the formation of a conglomerate stone within its beds. These are the product of innumerable cakes by which the rise and dip of the deposit may be ascertained. If we count their ages by these plates, like oaks by their circles, their vastness would confound our ideas. So similar also is the deposition of this sand to the ripple marks on the shore, which a transverse section shows, that few would deny that one and the same agent elaborated both. Take a walk on the shore. It inclines to the bed of the ocean, and almost at regular intervals you step upon patches of sand and gravel, distinctly and separately

strewn by the sea, with here and there a row of boulders and a bed of gravel; whilst on the top of the ridge, heaped up by the wave, is a continuous line of shingle, scattered shells, perfect and broken, together with lumps of rolled marl stuck full of gravel. Besides, long heaps of soft blown sand are everywhere manifest; some out of tide reach, others covered with gravel and fresh coarse sand brought by the return of the wave, and a third completely coated with a thick mud deposit of marl spewed down from the cliff by water. Now mount the sea banks and inspect the stratified gravel and grey sand beds. What strikes you? The sand is the same, and is deposited like that which you just now trod on, and after the same order: the pebbles are the same granites, traps, slates, and limestone, and you collect identical shells and exhume flat and rounded nodules of marl in no respect differing from those which the wave daily at present produces from the masses of clay it washes out of the cliffs.

There is, however, another sand to be noticed before we draw our conclusion. I mean a loose red sand which is more abundant than the grey, and appears to have been deposited by a different agent. This sand also, like the grey, lies in various positions. It is of a very soft nature, owing to its quartz being small and not in proportion to the other matter. Its colour also varies. At the top it is red, but becomes gradually lighter as its bed sinks downwards: nor is it so friable; nay, some of it, as on the south declivity of Marton, is not acted upon by acids, and emits an aluminous smell. It is free also from stones and shells—so free that not a particle of one of the latter can be discovered; but on piercing the ferruginous breccia or loamy sit on which it lies, both are met with in abundance. Such my own experience declares; yet further investigation is needed, since I am aware that Professor Forbes notices the discovery of a solen sèliqua, a mactra lustraria, and a dentalium at Preston, since also shells are not found in the fine sands and gravels of Kersal moor; yet the same deposit at Bowden is said to produce them in abundance; and, because workmen have brought me a Trochus from Layton out of this deposit; nevertheless it ought to be ascertained whether the shells were really taken out of the soft, loose sand, or the loamy redsilt, which always occurs where the other is found. My enquiries discovered such to be the case with the Layton shell, and so it may be elsewhere.

Another feature regarding this loose red sand must not be omitted.

Inspect it narrowly and you cannot fail to be struck with the thought, that the same agent fashioned it which raises the sand hills on the north and south of Blackpool as well as the ridges on the beach and even on the top of the cliffs. The wind at every blast carries forward the sand wave, leaves its burden and returns for another, which takes a different shape and thickness from being acted upon by irregular currents; and the consequence is the singular conjunction of queer layers of various sizes, thickness, and shape, all intermingled together. Only tincture these with oxyde of iron, and these ridges and hills are counterparts of our red sanded eminences, as sections demonstrate.

What can we conclude then? but that these beds of grey sand and gravel, as well as the drifted loose sand, comprise the remains of ancient sea beaches.

One moment more and I close this portion of my subject. Solidification in calcareous rocks often takes place at the time of deposition, but occasionally afterwards where the water of ferruginous or calcareous springs has flowed through a bed of sand or gravel and deposited iron or carbonate of lime in the interstices between the grains or pebbles: so that in certain places the whole has been bound together into a stone, and the same set of strata in other parts remains loose and incoherent. Dr. Leigh gives a most foolish account of the conglomerates which fall out of our cliffs at Hagberg near Blackpool. This is the true one. Water charged with oxyde of iron and carbonate of lime, trickling down the various substances of the brow, converts in its course certain portions to which it has affinity—the gravel and loose, coarse sand commixed with shells, into solid concrete masses,—leaving the rest unchanged. This arrangement and disposition are in no particular or determined order of stratification; but on the contrary, the different strata and veins, consisting of various depths and diameters, are mixed and interspersed in wild and irregular confusion, sometimes running in horizontal, sometimes in perpendicular, and frequently in zigzag directions. The vis saxifica, in the course of its filtrations, appears to avoid the marl and clay, and selects only the gravel and coarse sand as its favorite food; and, as these are disposed in wild and fantastic irregularity, the connection takes place in correspondence with them. The process of their formation is downwards, and they are found hanging in the cliff like icicles and stalactites with their points toward a centre,

crowned generally with a large flat flag of the same substance about three yards from the top of the cliff, with one or more cobble stones round which the infiltration commences. Penny stone, at the edge of the wave, is a huge conglomerate, and hundreds protrude yet from the breast of the cliff of immense bulk and length.

In the beds of marl, however, there takes place a process quite the reverse. As by the infiltration of crystallized carbonate of lime these sands are converted into stone, so the effect of carbonic acid gas is to dissolve granite, or to reduce it to a friable state by its solvent influence on the felspar, thus setting at liberty its other component parts of quartz and mica. What the labourer terms "rotten stone" has been thus acted on. I have also seen limestone boulders taken from the ancient sea beach beneath Pilling moss partially decomposed, the outside being changed into a soapy, whitish matter. I have tested these with muriatic acid, and there was left some residuum; so we may conjecture that the superincumbent bog gives out an acid which takes off the calcareous matter of the pebbles and leaves behind the soft substance. Or the decomposition may occur thus:—part of the bog, by the decomposition of Pyrites, may evolve sulphuric acid. If so, the acid would carry off all the carbonic acid on the surface of the stones and convert the calcareous portion of the coating matter into sulphate of lime, or the material of the Plaster of Paris. I may be speaking unadvisedly, since last week I detected a similar process on a limestone which I took from an ancient foundation within the Roman station at Walton. Some such chemical power, however, has been and is destroying the shells in some deposits. Thus in the abovenamed Pilling beach every vestige of them is gone, whilst in another, not so old, they are fast decaying. In the lower bed of our till the fauna also are very brittle, having lost their calcareous coating; but in the grey sand and gravels they are remarkable for their freshness, some of them, as the periwinkle, cockspur, &c., retaining their natural colours. "Thus," says Lyell, "we have the conservative and disintegrating effects of carbonic acid cementing the loose beach in solid blocks by incrustation; and when in a gaseous state or combined with water dissolving the granite by its action on the felspar."

The upper strata of our tertiary series is clay, which is fickle as to its colour and depth, and even its appearance at all on the surface, either

abraded or supplanted by beds of upheaved red sand. Its freedom from lime makes it suitable for the brickmaker. It is, however, like the marl, of marine origin, since it contains sea shells.*

Stones such as a geologist searches for are not unfrequently picked up. Each of them separately unfolds a history. I have collected magnesian limestone, permian conglomerates, flints that must have been carried from a distance, waterstone from the upper red marls of the trias, blocks of red, white, and shell marble (from the first of which a chimney piece was hewn for Rossal Hall), agates, &c., Kidney iron, gypsum, fossils, the *Gryphæa incurva*, *Cornu Ammonis*, madrepores, crinoidea, &c., impressions of plants, limestones pierced by the borer, and others enclosing recent shells, still retaining their natural appearance, though deprived of their calcareous matter, septarians, oval nodules of flint, and lastly, a black bituminous substance, probably petroleum, from the beds of marl and red sand. Such a specimen the Rev. J. D. Banister took out of the ancient sea beach at Pilling. It was soft when discovered, but soon hardened. Besides I am informed by a builder at Prestwich, that when it occurs in the red sand deposits there, that spot is avoided, as a speck of it chips off the plaster from the wall, if the mortar be mixed with it. We meet with it at times here. The workman calls it a cob of coal.

A question here meets us. From what parent rocks have the boulders and pebbles on the shore and in the strata, viz:—new red sandstones, carboniferous stones, grit, limestones, silurians, slates, granites, greenstones, porphyries, &c.,—been torn, and how were they conveyed? Cumberland and Furness, the rocks of Coniston, Wastdale, &c., may supply the upper slates and silurians, porphyries and lower limestones. Ireland also has contributed its quota, marbles perhaps; but Scotland has been, in my opinion, the greatest contributor. The mode of conveyance is, however,

* The following relative proportion of stones taken from this deposit at Blackpool, is extracted from the "Notes" of Mr. Binney, to whom I am greatly indebted.

	Angular.	Partly rounded.	Rounded.	Total.
Granites, Greenstones, Porphyries, &c.	17	20	12	49
Slates and Silurians	5	16	11	32
Mountain Limestone	3	2	1	6
Coalmeasures.....	4	9	2	9
New Red Sandstone and other superior rocks	1	2	1	4
	36	43	27	100

most perplexing. I can conceive how, on the upheaving of the Pennine chain, the floods of water occasioned thereby would wash the debris and torn fragments of its rocks into the muddy bottom of the sea at its base. I can conceive how afterwards the torrents of the Ribble and Wyre rolled down their boulders and shingle of mountain limestone, mill stone grit, &c.; but there is no marine wave of translation, now in action, that could convey a huge block of rock from the north west to the south east. The present condition of the stones in our deposits, especially in the lower till, scored, polished, angular, partly rounded, and lying all ends up, would seem to require them to have been borne on glaciers and icebergs, which probably floated in our ancient seas, and they were probably thus scratched and scored in their long passage by rubbing against the bottom. My late friend, Mr. Gilbertson, the fossilist of Preston, stoutly maintained, that not only did the Pennine chain manifest sure marks of being wave-worn, but that the sharp edges of its rock had been blunted and abraded by the grindings of icebergs. I too have seen, at the close of the great frost, huge girdles of ice heavily charged with boulders, gravel, and sand thrown on the shore at the Ribble mouth. This is the popular mode of conveyance; so whilst we are looking for a better we must be satisfied.

I might here content myself with having proved that our district must be classed under the tertiary system; but I would fix its position in one of the subdivisions of that group by an inspection of its organic remains, the best criteria of the age of any deposit. No remains of animals have been discovered either in the till, gravel, or sand beds. There have been floated down the streams of the Ribble and the Wyre, some belonging to more ancient rocks, and others to recent deposits, viz:—the upper jaw of the *Chirotherium* or hand-beast, in the possession of Mr. Simpson, watchmaker, Preston, the huge remains of an unknown animal found by the Rev. J. D. Banister in the clay of Pilling, the bones and horns of the *Bos latifrons*, *Bos longifrons*, *Bos primigenius*, *Cervus elaphus*, &c. Shells, however, which often escape obliteration under circumstances where the higher order of animals perish, are furnished in abundance. They are of marine origin; and the time and attention I have bestowed in collecting them from 1830 warrants me in saying that all of them, without exception, are identical with those that people the shores of Lytham, Blackpool, and Fleetwood. The land therefore under review was deposited during the era of the Newer Pliocene. The following list of fossil shells, arranged in

a descending scale according to the system of Lamarck, comprises those which have come under my notice.

Classis Mollusca.	Classis Conchifera.
Buccinum undatum.	*Ostrea edulis.*
Purpura lapillus.	*Pecten opercularis.*
Nassa reticulata.	*Mytilus edulis.*
—— *incrassata.*	*Cardium echinatum.*
Rostellaria pes-pelicani.	——— *edule.*
Murex erinaceus.	*Venus gallina.*
Fusus antiquus.	*Cyprina Islandica.*
—— *Bamffius.*	*Donax trunculus.*
—— *Turritella.*	*Tellina tenuis.*
—— *Terebra.*	——— *solidula.*
Littorina vulgaris.	*Psammobia Feroensis.*
——— *rudis.*	*Corbula nucleus.*
——— *retusa.*	*Mactra stultorum.*
Trochus umbilicatus.	——— *subtruncata.*
Scalaria communis.	——— *compressa.*
Patella vulgata.	*Lutraria elliptica.*
Dentalium entalis.	*Solen vagina.*
	—— *ensis.*
	—— *legumen.*

These shells have not all been found entire, but the eye of the conchologist can detect any one of them by the inspection of a small portion.

As they identify our district with the Newer Pliocene epoch, so by attending to the position, number, and habits of these testacea we may determine whether the deposition in which they lie was rapid or slow, and whether they lived in deep water or near the shore. During the process of precipitation each layer appears to have had a sufficient time partially to harden before another was strewn upon it. In this state, the wave, flowing over it, deposited its shells; and frequently we meet with them in such abundance—both old and young ones together—that we cannot but believe that these were undisturbed for some period, whilst they had propagated their species. Besides, others show evidence of having lain on the floor of the ocean after death, before they were imbedded. I have found a cockspur that, after having been pierced by a carniferous mollusk like itself, had floated on the surface of the mud until it had received the impression of a small plant. The oyster and Venus Islandica are not uncommonly covered with serpulæ, and the former with young shells on

the outer surface. I have seen the whelk exhibiting the mark of the acorn shell, which had once adhered to it. In these cases there must have been an interval of clear water, and a space of time must have elapsed between the death of the creature to whose shell it was attached and the burial of the same. But stronger proof is not wanting of slow deposition. Mr. Jelly, of Weston, took from the bottom of a marl pit the trunk of a tree, which he told me was "chock full of cockspurs," more probably pholades, or borers. This colony of borers, which had seized upon the tree, had grown and flourished, and had propagated there their own species, until another periodical deposition imbedded them and their habitation within its mud.

As the deposition of the strata was gradual, so also was the elevation. The process of each required ages. There is no very violent disruption to be seen on the surface of the country, no heaving of one layer over another by earthquakes, those paroxysms of heat. Probably at each change there may have been a "disturbance" which altered the composition, colour, &c., of the superior stratum, all derived, however, from the detritus of the secondary rocks, but the dye from the red sandstone, Let me not be misunderstood to imply that this elevation was one continued, regular heave without depression; there were many oscillations of both, as is evident from the different deposits of shelly marl and clay on the ancient sea beaches and drifted sand. Expansion and contraction, the consequence of heat and cold, would take place during the lapse of ages: now the land would rise, then sink, as the superior argillaceous stratum, a bad conductor, kept in the internal heat, like a top coat, or, when cooled, shrivelled up. During this geological dawn of modern times we have proofs of great changes of level of sea and land, which caused successive periods of diluvial drift, a season of refrigeration and a rafting of innumerable boulders on the glacier and iceberg. At length our orb was to be fitted for the habitation of man. The atmosphere became more genial; our district rose in a dome-like shape, which, as the loaf in the oven, was cracked on the surface by a greater force of heat. Thus the configuration of the Fylde was effected: hence the swelling undulations of its ridges and dales, ever winding from the centre to the Ribble and Wyre, and manifesting to this day the strength and the course of the disturbing element. Thus, too, our rivers received the waters of the district, and their fissures,—previously formed, widened and deepened during ages of oscillation,—became the

channels whereby abraded matter was carried into the basins at their mouths.

But are the changes of elevation still going on? It is the law of nature, say some geologists, accordant with the physical constitution of our planet. Instances of such changes can be verified. I believe that the supposition of Dr. Whittaker concerning the navigation of the Ribble as far as Ribchester in the Roman era, and the uplifting afterwards of its bed, first encouraged the question of continued elevation here. Baines also entertained the idea, as well as the Rev. Mr. Clay of Preston. Just, too, vowed that the earthquake of 1842 changed the level of his house at Bury, and an old gentleman often affirmed that on the day of the Lisbon earthquake our sea suddenly rose and fell and the cliffs moved. I have seen no signs of gradual change of elevation.

Thus the land under review must be classed under the Newer Pliocene deposits. Nor are they uncommon elsewhere. They are found in Cornwall, near the borders of the great estuaries of the Clyde and Forth in Scotland, and in that of the Shannon in Ireland. At Bridgnorth in Shropshire they penetrate sixty miles from the sea. Besides, they rise to a great height. Moel Tryfane in Wales attains the elevation of 1,400 feet, and Preston takes a position 350 feet above the sea.

Such is the tertiary formation of the Fylde: formed under water, washed by the sea during the silence of ages, alternately elevated and depressed, it rose in due time out of the workshop of nature, and has now become the habitation of industry and the theatre of enterprise.

ON THE DIPTEROUS INSECTS OF THE DISTRICT AROUND LIVERPOOL,

By the Rev. H. H. Higgins, M.A.

(Read 18th February, 1858.)

Family 25. Syrphidæ, Leach.

The Syrphidæ form a moderately large family which is divided into thirty-one genera. One hundred and fifty-three species are described in the Insecta Britannica; of these fifty-nine are generally distributed, forty-seven are more or less local, and forty-seven are rare. Sixty-two species have been found by me in the neighbourhood of Liverpool, and of these with one exception, specimens are deposited in the Museum of the Royal Institution. It is probable that several species have yet to be added to our local list.

The larvæ of the Syrphidæ are in their habits extremely various; some are found in decayed wood, others inhabit stagnant pools and are furnished with long tails used in respiration; in a considerable number of species the larvæ are found on leaves where they feed on Aphides, and are thus of great service to the plants on which they live. The eggs of the genus *Volucella* are deposited in the nests of humble-bees; when hatched the larvæ feed upon the larvæ of bees. In many species the skin of the larva hardens and becomes the case of the pupa.

The perfect insects feed on the nectar of flowers, or on the sticky exudation known as honey dew left by the Aphides upon the leaves of trees. There is one habit so characteristic of the Syrphidæ as to deserve especial notice, more particularly because it can hardly have escaped the observation of many who are not Entomologists. Whoever has walked during a sunny hour through woods where the foliage overhead admitted the beams of light to fall on the ground only here and there in scattered patches, must have seen high in the slanting pencil of rays, an insect poised so steadily that but for the vibration of its wings it might seem to be at rest; at the slightest alarm in a moment it has vanished, for the eye cannot follow it into the shade; but scarce a minute will pass if all is

still before it will be there again poised and stationary as before, as if the sunbeam were its home. This habit pertains to many of the species, but is I believe peculiar to the family of the Syrphidæ.

Genus CEBIA, Fab.

C. conopsoides, L.—A specimen seen by me at Bidston, Sep., 1856.

Genus ERISTALIS, Latr.

E. tenax, L.—In hedges and on palings near houses, common.

E. sepulchralis, L.—Borders of ponds, Rainhill, Bold, &c., probably not uncommon.

E. intricarius, L.—Lanes and hedges, generally distributed.

E. nemorum, L.—Generally distributed.

E. arbustorum, Dg.—Common, especially on *Senecio Jacobæa*.

E. horticola, Dg.—Found with the last species but not so common.

E. fossarum, Mrle.—Near stagnant water, not rare.

E. floreus, L.—Woods and gardens, rare in 1855 and 1857, common in 1856.

Genus HELOPHILUS, Mg.

H. pendulus, L.—Near watery places, common.

H. versicolar, Fb.—Stated in the Insecta Britannica to be rare; not uncommon near ponds at Rainhill, but active and very shy.

H. lineatus, Fb.—By ponds, Huyton quarry and near Tarbock.

Genus SYRITTA, St. F.

S. pipiens, L.—Common everywhere.

Genus XYLOTA, Mq.

X. sylvarum, L.—Woods, Knowsley.

X. segnis, L.—Woods and gardens, not uncommon.

Genus CRIORHINA, Hms.

C. oxyacanthæ, Mg.—Wood, Halsnead, 1856.

C. regula, Fln.—Wood, Halsnead, 1855.

Genus VOLUCELLA, Gf.

V. pellucens, L.—Woods and lanes, not plentiful.

V. bombylans, L.—Woods and lanes, not rare.

Genus SERICOMYA, Mg.

S. borealis, Fln.—Bold wood. The beacon, Billinge. Huyton quarry.

S. superbiens, Mlr.—In a lane, Tarbock, and at Rainhill.

Genus CHRYSOTOXUM, Mg.

C. bicinctum, L.—Plantation, Windle Moss. Peaty plantation, Knowsley.

C. intermedium, Mg.—Sand hills, New Brighton. Southport.

C. marginatum, Mg.—In a lane, Halsnead. Rare I. B.*

Genus PIPIZA, Fln.

P. bimaculata, Mg.—Amongst grass, Rainhill. Halsnead.

P. guttata, Mg.—At the bottom of a hedge, Rainhill.

P. melancholica, Mg.—Wood, Knowsley, 1856.

P. noctiluca, L.—Swept from grass, Halsnead.

Genus CHRYSOGASTER, Mq.

C. cœmeteriorum, L.—On Umbelliferæ, not rare.

C. metallica, Fb.—On flowers in moist places.

C. discicornis, Mg.—On Umbelliferæ, not rare.

Genus RHINGIA, Fb.

R. rostrata, L.—Plantations and hedges, on herbaceous plants, common.

Genus CHRYSOCLAMIS, Rondani.

C. cuprea, Spl.—On the trunk of a tree, Rainhill, 1854.

Genus CHEILOSIA, Mg.

C. lucorum, L.—Woods, generally distributed.

C. grossa, Fln.—Hedges, soon after the first appearance of the leaves.

C. means, Fb.—Plantation, Rainhill, 1856.

C. variabilis, Pz.—Moist woods, not uncommon.

C. mutabilis, Fln.—Moist woods, not uncommon.

Genus SYRPHUS, Fb.

S. pyrastri, L.—Amongst grass, end of June, generally distributed.

S. ribesii, L.—Gardens and woods, common.

S. vitripennis, Mgrle.—Closely allied to the preceding species, and equally common.

S. bifasciatus, Fb.—Hedges and on shrubs, not rare.

S. buniger, Mg.—On flowers among grass.

S. corollæ, Fb.—On the banks of a pond, Rainhill. Eastham wood.

S. balteatus, Dg.—Appears about midsummer, not uncommon.

S. tricinctus, Fln.—Plantation, Windle moss. Wood, Halsnead. Rare I. B.

S. glaucius, L.—On Umbelliferæ, Knowsley.

* Insecta Britannica.

S. laternarius, Mlr.—On Umbelliferæ, not very common.

S. albostriatus, Fln.—Hedges and on flowers, common.

S. umbellatarum, Fb.—On Umbelliferæ, not uncommon. Rare I. B.

S. cinctus, Fln.—Very common in woods, Cheshire.

S. auricollis, Mg.—Woods, Knowsley, Rainhill.

S. manicatus, Mg.—On flowers, common all the summer.

S. clypeatus, Mg.—On flowers, common.

S. cyaneus, Mlr.—On flowers, common.

S. granditarsus, Fstr.—Moist places, often in the shade, not rare.

S. rosarum, Fb.—Garden, Rainhill, 1855.

S. scalaris, Fb.—Amongst grass, not uncommon.

Genus Doros, Mg.

D. citrofasciatus, Dg.—Plantation, Windle moss, 1855.

Genus Melithreptus, Lw.

M. menthastri, L.—On flowers amongst grass, not uncommon.

Genus Baccha, Fb.

B. obscuripennis, Mg.—Amongst grass, not rare.

Genus Ascia, Mgrle.

A. podagrica, Fb.—May be swept from grass anywhere in summer.

Family 26. Conopidæ, Leach.

This family contains but one genus, in which are nine British species. It is chiefly remarkable for the parasitic habits of the larvæ, which come to maturity in the abdomen of humble-bees, the perfect insect escaping through the segments.

Genus Conops, Fb.

C. rufipes, L.—Swept from flowers, not common.

NOTES ON THE BUSLINGTHORPE BRASS.

By the Rev. John Sansom, B.A.

(Read 14th January, 1858.)

+ "Issy gyst Sire Rychard le Fiz Sire John de Boselyngthorp del alme dery Deus eyt mercy."

Such is the inscription round the slab, in which the Buslingthorpe Brass is fixed. The stone and brass are described by Boutell, (*Christian Monuments*, 1854, p. 146,) who fixes the date at c. A.D. 1280. Boutell also supplies the arms, (the shield, on which they were originally engraved, having been lost,) as "*Or, a chevron, sable.*" These arms, however, supplied from a contemporary roll of arms, differ slightly from the Buslingthorpe arms, as described in the roll, temp. Ed. II., published in the Parl. Writs by Sir Francis Palgrave, and also by N. H. Nicolas, Esq., (Pickering, 1829,) where they stand as follows :—

"Sire Richard de Boselingthorp, de argent, od le chef endente de sable, e un cheveron de goules."

These latter were the arms of "Richard, *son* of Richard de Buselyngthorp, Knt."; as (a gentleman, who has consulted the document, informs me) is the description given of Richard Buslingthorpe, the *younger*, in the copy of a deed of transfer, dated 1282, to be found in Add. MSS. 6118, in the Brit. Mus. It is observable, that this date goes far to bring back the death of the *elder* Richard, whom the brass commemorates, and the son's succession to the property, to Boutell's date of c. 1280. At all events, in the Parliamentary Writs, among the first summonses on record, as early as 1294, this second Richard appears as assessor and collector, in co. Linc., of the tenth granted in the Parliament at Westminster, 22 Edw. 1. From this time he was regularly summoned to perform military service, &c., on account of lands in Notts., Derby, and Linc., down to 1324, when, dying

at an advanced age, he was buried (I *suspect*) at Wellingore,* where he held property apparently *jure uxoris*. John Buslingthorpe, who succeeded to his estates, was (like his father) connected with the Scotch wars under the Edwards. He is also mentioned in Parl. Writs, Rot. Scotiæ, Calend. Rot. Chart., &c. Dying without issue, temp. Ed. III., he was succeeded by his sister, Margaret Bracebridge.

The earliest mention, as far as I am yet aware, of the name of Buslingthorpe, occurs in the *Monasticon*, in a reciting charter of Hen. II., confirming a grant to the canons of Barlings Abbey :—

"Ex dono Walteri de Briselingthorp, et ex concessione Bertranni filii sui, unam bovatam terræ cum pertinentiis in Buselingthorp."

There is a tradition, that an ancestor of the Buslingthorpes, having *killed a dragon*, in reward for his exploit received a royal grant of the pasture of Lissington. Now, as at the time of the Domesday survey there was no parish of Buslingthorpe, it seems not improbable that this dragon-slayer may have founded the Church, and parish of Buslingthorpe, within his new domain. He may have come originally from the place near Leeds, called Buslingthorpe, (Busli's-ing-thorpe ?) in which neighbourhood Roger de Busli had manors at the time of Domesday. It seems, however, more likely that the name and family of Buslingthorpe *originated in Lincolnshire*, and passed at a later period into Yorkshire. Thomas Hearne, in his *Liber Niger Scaccarii*, at the commencement of vol. ii., has published a very early account of some of the Lincolnshire manors; in which document a person named *Buselinus* is mentioned as holding certain lands in *Esatorp*, in the same locality as the present Buslingthorpe. This Esatorp, where Buselinus was tenant, would come naturally enough to be called *Buselin's Thorpe*, to distinguish it from other places in the neigh-

* In the north aisle of Wellingore Church is an altar-tomb of alabaster, with the effigies of a knight in armour and his lady. It has neither arms nor inscription remaining; but from the date assigned to it, and the probability of its representing the lord and lady of the manor, I conjecture that the persons commemorated by this monument are Richard de Boselingthorpe (the *younger*) and Isabella his wife; who would seem to have made Wellingore their chief residence, as it is also described (in the Inq. p. m.) as their principal and most valuable estate, being placed before Buslingthorpe, Ludborough, or Bothumsell. This altar-tomb may have been erected by John de Buslingthorpe, or by his sister Margaret, wife of John de Bracebridge, both of whom succeeded to the property, the latter upon the death of her brother, s. p.

bourhood of the same name, as Estorp, Aistorp, &c.; and Walter, upon his succeeding to Buselin's property, would become known as *Walter de Buselin-thorpe*. Such would appear to be the most probable origin of the name. At all events, from the time of Walter—shortly after the Conquest—down to the time when the property passed by an heiress to the Bracebridge family, of Bracebridge, co. Linc., and of Kingsbury, co. Warwick, the Buslingthorpes had a residence here, viz., a moated manor-house, perhaps originally one of the *small castles*, so numerous and so much complained of during the reigns of our early Norman kings.

What is meant by the tradition of the ancestor of the Buslingthorpe family having killed a dragon, I will not undertake to say. That it had no allusion to Lincolnshire *drainage*, (which is the *received* opinion,) I am convinced, as well because there is no evidence of any *early* attempts at drainage in this locality, as because there are other localities, to which a myth of *dragon-slaying* is equally attached, where no such works could ever have been needed. Whether the fact of *founding a Church* for the overthrow of the "great dragon," or whether, supposing the Church to have been originally dedicated in honour of *St. George* or *St. Michael*, (both favourite saints with the Anglo-Norman knights), the circumstance of some *representation* of the patron-saint having been mistaken for the founder, may better account for the tradition, I leave as an open question, without hazarding an opinion: where evidence is wanting, we can conclude nothing by the mere weighing of probabilities.

Mention is made of several members of the family of Buslingthorpe in Rot. de Fin., Test. de Nev., Calend. Rot. Chart., Inq. p. m., Rot. Scot., Dodsw. MSS. (Bodl.), Thoroton's Notts., &c., &c.

The younger Richard had free warren in Staynton and Wraghby, as well as Beselingthorp. He married Isabella, (St. George?) in whose right he held a moiety of the manor of Bothumsel, co. Notts. He also held the manors of Ludborough, near Louth, and of Wellingore, near Temple-Bruern. Wellingore paid an assize to the Hospitallers at Temple-Bruern. And it seems not unlikely, that, before it passed to the Hospitallers, the Buslingthorpes were (more or less) connected with Temple-Bruern; and that Sire *John* de Boselingthorpe, (father of the first, and grandfather of the second *Richard*,) may have been a *Templar* belonging to that Pre-

ceptory, or otherwise connected with their order. His tomb in Buslingthorpe Church bears a recumbent effigy in stone *with crossed legs*. He probably died about the *middle* of the reign of Hen. III. His father, *William*, was either *son* or *grandson* of Bertram, the son of Walter de Buslingthorpe; which *Walter*, I suppose, founded the Church, temp. Hen. I. or Steph.*

Any further particulars relating to this family, or information tending to connect the Buslingthorpes with the place so called at Leeds, would be received as a favour by the compiler of this brief notice.

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* The succession of the Buslingthorpes to the "lordship" was in this order:—Walter, Bertram, William, (*another* William?) John, Richard, Richard the younger, John,—succeeded by his sister, Margaret Bracebridge, who was succeeded by Robert Bracebridge, described as her cousin and heir.

ON SLAVERY, AS IT EXISTED IN ENGLAND DURING THE SAXON ERA, AND THE SUBSTITUTION OF VILLENAGE AFTER THE NORMAN CONQUEST, UNTIL ITS GRADUAL EXTINCTION.

By Joseph Wright, Esq., Solicitor, Doncaster.

(Read 20th May, 1858.)

It is not purposed on the present occasion to enter into any lengthened inquiry as to the origin of the Saxon power in this country; but it will be necessary that we should briefly refer to it in passing.

When the Saxons first began to obtain a name, they lived in Cimbrica, Chersonesus; which we now call Denmark.* They appear to have been invited over by Vortigern, the General of the Britons, about A.D. 449, shortly after the Romans withdrew their garrisons, on the decline of their empire under Valentinian the younger. The Britons were at that period "a soft, lazy and unwarlike people,"†

"Unnerved, exhausted, spiritless and sunk,"‡

and wholly unable to defend themselves against the incursions of the Picts and Scots, whom the Roman soldiery had in some measure kept in check. The Britons, when they invited the Saxons, sent ambassadors to them, who described the country "as a land large and spacious, abounding with all manner of necessaries."§ Soon after the return of this embassy, the Saxons, under the command of Hengist and Horsa, arrived in Britain with their flat-bottomed boats, called "cyules," or long boats, and defeated the Picts and Scots in two several engagements.|| The Saxons seem to have been greatly satisfied with the "lands, customs and plenty of Britain," (which according to ancient tradition, was originally called "the country of green hills,")¶ and soon came to the determination of appropriating so goodly an inheritance to themselves.

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* Camden, 124. † Ib. 123.
‡ Thomson's "Liberty," part 4.
§ Camden, 123. || Ib. 122.
¶ Thierry's History of the Conquest of England, vol. 1, bk. 1, page 1.

Under the pretence of ill pay and short diet, they entered into a league with the Picts, raised a sanguinary war against their entertainers, and in all parts put the inhabitants to the sword, wasted their lands, razed their cities, and at length dispossessed the Britons of the best part of the island, and their hereditary estates.* So fearful were the atrocities inflicted upon the inhabitants, that we are told in language, of the most expressive character, "that they suffered whatever a conqueror may be imagined to inflict, or the conquered to fear."† The few who were not massacred or expelled from their habitations, were reduced to the most abject slavery, and were employed in cultivating, for their new masters, those grounds which they once claimed as their own.‡ The Saxons having by their treachery established themselves in Britain, divided it into seven kingdoms, and made of it a heptarchy,§ under which they, for a long time, lived in a flourishing condition; until at last all the other kingdoms, shattered with civil wars, were subdued to that of the West Saxons.||

The peaceful Egbert (who was crowned king of Britain at Winchester)¶ issued an edict that the whole kingdom should be called "Englelond," that is, "the land of the Angles," or Angle Land.** The country afterwards (A.D. 1014) fell for a short time under the yoke of the Danes; but eventually the government (A.D. 1041) reverted to the English under Edward the Confessor, who recovered the regal dignity. The moral state of the inhabitants at this period seems to have been most vicious and degraded, for it is recorded that the "clergy were idle, drowsie and ignorant," and that the laity gave themselves over to luxury, and a loose way of living; insomuch that Gervasius Dorobernensis observes of those times, "*they ran so headlong upon wickedness that 'twas looked upon as a crime to be ignorant of crimes.*"††

"The English at that time," says William of Malmesbury, "used clothes that did not reach beyond the middle of the knee; their heads were shorn, their beards shaven, only the upper lip was always let grow to its full length; their arms were even loaded with golden bracelets, and their skin all set with painted marks."‡‡ The love of display seems to have formed a prominent feature in the Saxon character, especially among

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* Camden, 122. † Camden, 123.
‡ Wright's Goldsmith, vol. 1, p. 13. § Camden, 130.
|| Ib. 133. ¶ Brady's Old Eng. Hist., 27.
** Camden, 134. †† Cam. 154. ‡‡ Ib. 154.

the men, for we are told that they had sometimes gold and precious stones round their necks; that the men of consequence or wealth usually had expensive bracelets on their arms, and rings on their fingers; and it is recorded as singular that the bracelets of the male sex, were more costly than those allotted to the women.* We also read of silk garments worn by them, woven with golden eagles. Indeed, personal ornaments seem to have been special objects of testamentary disposition, and were no doubt deemed high marks of esteem. Bequests of this nature are mentioned in several Anglo-Saxon wills, referred to by Turner in his history of that people, but we shall only notice one, where the testator is stated to have bequeathed to his lord a *beah*, or bracelet, of eighty gold mancusæ, and to his lady one of thirty: he appears also to have had two neck bracelets, one of forty, and another of eighty gold mancusæ, and two golden bands.† A mancusa, it may be observed, was of the value of six shillings of the coinage of that day; five pennies made one shilling, and thirty pennies one mancusa:‡ but Turner gives it as his opinion, that the mancusa was a weight, not a coin.§ And here we may mention, that the Anglo-Saxons, at an early period, were eminent as workers in gold and silver, and exported their productions to different parts of the world.||

But we must now come to the subject of this paper, viz., *slavery* as it existed among the Anglo-Saxons. It is well authenticated (perhaps it may be said, too well), that during that era a large proportion of the Anglo-Saxon population were complete slaves, and without any political existence or social consideration in the state. This unfortunate class of men, who were called *Theow* and *Esne*, are frequently mentioned in our ancient laws and charters, and are exhibited in the servile condition of being the property of others.¶ They were bought and sold with the land, and were conveyed in the grants of it promiscuously with the cattle and other property upon it. Thus, in an enumeration of property on an estate, it is said that there were a hundred sheep, fifty-five swine, two men, and five yoked oxen. In the Anglo-Saxon wills these wretched beings are given away, precisely as we now dispose of our plate, furniture or money. An archbishop bequeaths land to an abbey, with

* 2 Sharon Turner's History of the Anglo-Saxons, b. 8, c. 5, p. 59.
† Ib. b. 8, c. 5, p. 59. ‡ Ib. b. 8, c. 12, p. 127. § Ib. b. 8, c. 12, p. 130.
|| 2 Turner b. 8, c. 9, p. 96.
¶ Cassell's Illustrated Exhibitor and Mag. of Art, vol. 2, p. 369.

ten oxen and two men; and Elfhelm* bequeaths his chief mansion at Gyrstingthorpe, with all the property that stood thereon, both provisions and men.† They were allowed to be put into bonds, and to be whipped. They might be branded like cattle or sheep, and yoked like oxen.‡ They had, however, this advantage over the freemen, that their masters were responsible for their delinquencies,§ while the ordinary freeman, who had not a lord to pay for him, was bound with sureties for his good behaviour. Every Saxon freeman had his undertakers, that he should do every man right, and make satisfaction for the crimes he committed. The freemen, masters of families, their sons at fourteen years of age, and all other freemen, were cast into decuries or tithings; except clercs, milites, their children and women: that is, ten freemen, or free pledges, were bound all for one another, and were to bring the offending person amongst them to justice, or, if they could not do so, to make satisfaction for the crime he committed.‖ The introduction of Christianity, however, led to frequent manumissions, and established another class of people, called *frilazin*, and persons so made free were considered to be in a middle state between slaves and freemen. Those who were freemen from their birth (or freemen of ignoble rank) were called *ceorls*, and constituted a middle class between the nobility and such labourers and mechanics as were slaves, or descended from slaves; and being generally devoted to agriculture, a *ceorl* was the usual name for a husbandman or farmer.¶ A freeman, however, might lose his liberty, the degradation from liberty to slavery being one of the punishments to which a freeman was liable. A freeman reduced to slavery by the penalty of the law, was called a white *theow*, that is a penal slave, and, when so reduced to slavery, became subject to corporal punishment; for one who had stolen while free might be scourged by his accuser; but if, while a white *theow*, he stole, he might be hanged.** So by the laws of Ina (who was king of Wessex in A.D. 688) if the wife and family witnessed his offence, they were all forced into slavery; and if a freeman worked on the Sunday without his lord's permission, he forfeited his freedom, or subjected himself to the payment of a fine of 60s.; and if a priest so transgressed he became liable to double

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* See his will; which was first published at the end of Lye's Anglo-Saxon Dictionary. Barrington on Statutes, note (g.) p. 37.

† 2 Turner b. 8, c. 9, p. 97. ‡ Ib. b. 8, c. 9, p. 99. § Ib. p. 95.

‖ Brady's Old English History: The Glossary, p. 55.

¶ 2 Scriven on Copyhold, 671. ** 2 Turner b. 8, c. 9, p. 96.

that amount.* In proof of the very odious nature of the slavery which was at one time practised among the Saxons, we may quote the language of Dr. Henry in his History of Great Britain, where he states that "Wulfstan (who became Archbishop of York A.D. 929) cured the "people of Bristol of a most odious and inveterate custom, which they "derived from their ancestors, of buying men and women in all parts "of England, and exporting them to Ireland for the sake of gain. The "young women they commonly got with child, and carried them to market "in their pregnancy, *that they might bring a better price.* You might have "seen, with sorrow, long ranks of young persons of both sexes, and of the "greatest beauty, tied together with ropes, and daily exposed to sale; nor "were these men ashamed, oh! horrid wickedness! to give up their "nearest relations, nay, their own children to slavery. Knowing the obsti-"nacy of these people, it is said, he sometimes stayed two months among "them, preaching every Lord's day; by which, in process of time, he "made so great an impression upon their minds that they abandoned that "wicked trade, and set an example to all the rest of England to do the "same."†

And here, perhaps, it may not be out of place to refer to the origin of slavery, which we are assured was inflicted for disobedience to parents; and in support of this view we may quote the testimony of an ancient author (the author of Les Termes de la Ley)‡ who tells us "that bondage "or *villenage* had its beginning among the Hebrews, and its original of "Chanaan the son of Ham, who, because he had mocked his father Noah "to scorn, lying dissolutely when he was drunk, was punished in his son "Chanaan with penalty of bondage."§ That slavery existed in this country at the time of the conquest (A.D. 1066), there can be no doubt; for Sir William Temple, in his introduction to the History of England, expressly states, that the Normans found among us a sort of people who were in a condition of downright servitude, used and employed in the most servile works, and belonging, both they, their children, and effects, to the lord of the soil, like the rest of the cattle or stock upon it, and that these seem to have been they who held what was called

* Ancient Institutes of Laws of England, p. 23.
† Dr. Henry vol. 4, p. 238. 2 Turner 68, c. 9, s. 99; in note 49.
‡ Sir William Rastall, who was one of the Justices of the King's Bench in 1558.
§ Les Termes de da Ley, p. 445.

the folkland, *from which they were removable at the lord's pleasure.** These "lords of the soil," were doubtless the owners of *manors*, which Blackstone tells us are, in substance, as ancient as the Saxon constitution, though perhaps differing a little, in some immaterial circumstances, from those that exist at the present day; and were so called because the lord usually resided there.† And here, in passing, it may not be uninteresting to notice that the mistresses of manor houses in former times served out to the poor weekly, with their own hands, certain quantities of bread, and were therefore called *lef-days*, two Saxon words signifying bread-giver; the words were at length corrupted, and the mistress called lady.

As to the institution of manors, we find that the ancient Kings of the realm, who held all the lands of England in demesne, (i.e. in their own hands) usually granted a certain compass, or circuit, of ground, to certain lords and great personages, with liberty for them to parcel the lands out to other inferior tenants, reserving such duties and services as they thought fit, the said lords performing such service, and paying such rents, &c., as the said Kings reserved by such their grants and donations.‡ Within these manors, courts leet and courts baron were generally held. Manors were in reality the immediate cause of courts baron, without which they could not exist;§ but courts leet belonged to the King only, and could only be held by special prescription, (which presupposed a grant) or some special royal patent.‖ The privilege, however, to hold courts leet was generally granted to most lords for the ease of the people, who were *resiants* or inhabitants of their manors.¶ The proper business of the courts leet was of a criminal nature, viz., to enquire into and punish inferior offences of a public character, such as public breaches of the peace, bloodshed, affrays, encroachments, nuisances, &c., yet it might also enquire of all such other offences, under high treason, as were of a public nature, and committed within its precincts. But offences, whereof the punishment was loss of life or member, were only presentable and enquirable there, i.e., the jurors there might find the indictment; but then it was to be certified over to the justices of the assizes to be tried.** The business of the courts baron, on the contrary, was of a civil nature, viz.,

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* Stewart's Black. vol. 2, c. 6, p. 92. † Ib. p. 90.
‡ Scroggs's Courts Leet and Courts Baron, p. 76.
§ Coke's Cop., sec. 31, p. 41. ‖ Scroggs, p. 83. ¶ Ib. p. 2.
** Ib. p. 4.

1st, to adjust differences between lord and lord adjoining; 2nd, to keep rest and quietness between lord and tenant, that the lord should permit the tenant to enjoy, paying his rent, and performing his services, and that the tenant should not wrong the lord by withdrawing his rents, customs or services; and 3rd, to set things right between tenant and tenant.* These manor courts are still in being in this country, and retain the same name and nature as they had before the conquest; but their jurisdiction has unfortunately been allowed to lie dormant, as by their means ready redress was anciently brought to every man's door, and right was rendered in every village.

In proof of the many manors which existed at the time of the conquest, and as illustrative of the ruthless manner in which the Norman seized to his own use the lands of the Saxon nobility, we need only refer to the observation of Sir Henry Ellis, who informs us, in his introduction to Domesday, (a document which contained a survey of the whole kingdom) that the Conqueror himself held as many as 1290 manors, (Thierry says nearly 1500) exclusive of Berewicks and Sokes. Of these, about 350 had, in some way, belonged to the Saxon crown, and are spoken of as the King's, or had been old demesne.†

WILLIAM appears to have been no less lavish in the distribution of his favors amongst his followers, for it is stated that he gave to Robert, Lord Moreton, Earl of Cornwall, alone, as his share of the spoil, 793 manors; to Alan, Lord Bretain, Earl of Richmond, 442 manors, and to Geofrey, Bishop of Constance, 280 manors;‡ and we find that William, the first Earl of Warren, was at the time of making the general survey referred to, possessed of 200 lordships in several counties of England, whereof Conisberg, in Yorkshire, was one, which had at that time 28 towns and hamlets within its soke.§ This rapacious example of the conqueror seems to have been readily followed by Cromwell in 1650, in his Irish expedition, when he seized the lands of the Irish Royalists, and divided five millions of acres amongst his adherents.‖ The Normans, shortly after the conquest of England, introduced the *feudal* system into the country, upon which they enfranchised all such Saxon slaves as fell to their share, by admitting

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* Scrogg's, 83. † Stewart's Black c. 6, p. 99, note *t*.
‡ Brady's Old English History, p. 13, c. § Blount's Ancient Tenures, 186.
‖ Scriven on Copyhold, vol. 1, p. 2, in note c.

them to *fealty*, (which was an oath taken to be true to their lord) in respect of the little livings which they had hitherto been allowed to possess, merely as the scanty supports of their base condition; and which they were still suffered to retain upon the like service as they had in their former servitude been used and employed in. But this possession, being clothed with *fealty*, was by that means, advanced into a kind of *tenure*, and differed very much from the ancient servile possession, and was thenceforth called *villenage*,* a term used (according to Sir Edward Coke,) because they lived chiefly in villages, and were employed in rustic works of the most sordid kind, resembling the Spartan helots, to whom alone the culture of the lands was assigned; their rugged masters, like our northern ancestors, esteeming war the only honourable employment of mankind.† In this respect they differed greatly from the Romans, amongst whom agriculture or tillage was in high estimation, insomuch that the senators themselves thought it no degradation to put their hand to the plough.‡ It is not improbable, that the few Saxons who were fortunate enough to retain their lands, would, to a certain extent, imitate the example of their Norman brethren, in the enfranchisement of their slaves; but we are expressly told that neither did our Saxon nor Norman ancestors mean to increase or strengthen the possession of their *villeins*, but to leave that as dependant and precarious as before; save only that as by their admission to *fealty*, their possession was put in some measure upon a *feudal* footing, the lords could not deal with them so wantonly as before.§ To what extent the *villein*, (for we must now so call him) was benefited by the change, (except perhaps in the alteration of *tenure* before alluded to,) we are at a loss to conjecture, when we read that under the Normans the payment of a few shillings was deemed an equivalent for the murder of a man who was not a freeman, while the killing of a deer was punishable with death||—and a man was sentenced to lose both his eyes for the slaying of a boar. Of the Norman himself it is quaintly said by an old author, that "this savage King loved wild beasts as if he had been their father."¶

Indeed the great bulk of the people scarcely suffered less under the brutal cruelty of the Norman, than the Britons had suffered under their

* Jacob's Law Dictionary, vol. 2, Tit. Tenure, 3 s. 13. † 2 Stewart's Blac., c. 6, p. 93.
‡ Co. Litt. Lib. 2 c. 5, s. 117. § Jac. Law. Dic. Tit. Tenure, 3 s. 13.
|| Jac. Dic. tit. Game. ¶ Chron. Sax., Gibson p. 191. 2 Thierry b. 6, p. 135.

Saxon ancestors; for in one district alone, viz., between the Tyne and the Humber, no less than 100,000 of the inhabitants are said to have been destroyed.*

"Even to feed
"A tyrant's idle sport, the peasant starv'd;
"To the wild herd, the pasture of the tame,
"The cheerful hamlet, spiry town, was given,
"And the brown forest roughened wide around."†

It is well known that foreigners who visited England about the end of the 15th century, were astonished at the great number of serfs they beheld, and the excessive harshness of the servitude, when compared with what it was on the continent, and even with what it was in France.‡

The *feudal* system (to which we have just referred) was originally a pure military policy of the northern conquering nations, and devised by them as the most likely means to secure their new acquisitions. In consequence of the introduction of that system into the country, it became a fundamental maxim and necessary principle of our English *tenures*, "that the king is the universal lord, and original proprietor of all the lands in his kingdom," and that no man doth or can possess any part of it, which has not mediately or immediately been derived as a gift from him, to be held upon *feodal* services.§ To all *tenures* under the *feodal* system, (except tenures in frankalmoigne and tenancy at will,)|| *fealty* was inseparably incident, and, in explaining the nature of it, we shall have to touch upon *homage*, with which it is usually mentioned, although the two differ in many material points as regards the persons by whom they were performed, the manner of their performance, and the nature of their solemnity. *Homage*, it may be observed, especially concerned service in war, and appertained to knight's service,¶ and was deemed the most honourable, and most humble service of reverence that a frank or free-tenant might do to his lord. It could only be done by tenants in fee-simple and tenants in tail,** and was expressive of the duty of the tenant to his lord, and the affectionate love and protection of the latter towards his tenant.†† When *homage* was received, the tenant knelt humbly before his lord ungirt, with his head uncovered, and, holding both his hands together,

* Buckley's Great Cities of Middle Ages, York, 275.
† Thomson's Lib., part 4, p. 282. ‡ Thierry, vol. 5, p. 503.
§ Stewart's, Bl., vol. 2, c. 4, p. 51. || Co. Cop. sec. 20, p. 33, 3.
¶ Co. Cop. sec. 20, p. 33, 1. ** Co. Cop., sec. 20, p. 33, 3.
†† 1 Co. Litt. L. 2, c. 1, sect. 85.

between those of his lord who sat before him, professed that he became his man from that day forward, of life and limb, and earthly worship, and unto him should be true and faithful, and bear to him faith for the tenements which he claimed to hold of the lord, saving the faith which he owed unto his sovereign lord the king; and when this was concluded, the lord, so sitting, kissed him.*

As to the importance of the latter part of the ceremony on the lord's part, we may notice that Sir Edward Coke tells us, a special Act of Parliament was passed in the 18th Henry VI, to excuse the kissing, in case of *homage* made to the king, by reason of the pestilence then prevalent.† None, in fact, was capable of receiving *homage*, but the lord in person. *Fealty*, on the contrary, concerned service at home, and properly belonged to *soccage* tenure. It could be performed by a tenant for life or for years, and might be received by the lord's steward or bailiff, on his behalf.‡ When the tenant did *fealty* to his lord, he stood before him, held his right hand on a book, and repeated the following form of oath, "Know ye this, my lord, of A., that I shall be faithful and true unto you, and faith to you shall bear for the lands which I claim to hold of you, and that I shall lawfully do to you the customs and services which I ought to do, at the terms assigned—so help me God and the Saints," and he shall kiss the book.§ Although *homage*, as before observed, was deemed more honourable than *fealty*, the latter was more sacred, as the tenant was bound to the performance of it by an oath, which was not the case in *homage*. The reason was this—the tenant was not sworn in doing *homage* to his lord, because no subject was sworn to another subject, to become his man of life and member, but to the king only, and that was called the oath of allegiance or homagium ligeum.|| By the statute of the 12th Charles II, c. 24, which was made to free the subject from the burden of knight's service, and the oppressive consequences of tenure *in capite*, all tenures were wholly discharged from the incident of *homage*, not because *homage* itself was any grievance, but because it was more properly an incident to knight's service, which that statute abolished.¶ The law of *fealty*, however, was not altered by the abolition of military

* 1 Co. Litt. L. 2, c. 8 sect. 85.
† Ibid. In note 3. Vid. Rot. Parl. 18 H. 6, vol. 5, p. 31.
‡ Co. Cop., sec. 20, p. 33, 2, 3. § 1 Co. Lit. b. 2, c. 2, s. 91. || Ib. 68 a. c.
¶ Tom. Law Dic. tit. Homage.

tenures under the statute 12 Charles II, c. 24, although the performance of *fealty* is now no longer exacted. In the case of *copyholders* (who, we shall hereafter shew, are the successors of tenants in *villenage*,) a respite of their *fealty* is generally entered as of course, and in other tenures it is altogether passed over.* Of *villeins*, we are told there were two sorts in England; the one termed *regardant* the other *in gross*. A *villein in gross* was immediately bound to the person of the lord and his heirs—the other, a *villein regardant* to a manor, was bound to his lord as a member belonging and annexed to a manor whereof the lord was owner.† A *villein in gross* might be sold to any person, like a horse, a cow or a sheep; and a grant of him in English deeds was expressed in the following manner, "Know that I have sold ——— my knave, and all his offspring, born, or to be born,"‡ but a *villein regardant* could only be sold with the land, as a limb or part of the estate. A male bondman was styled a *villein*, but a female *villein* was called a *neife*.§ They could not acquire any property, either in lands or goods, as against their lord, for if they purchased either, the lord might enter upon them, oust the *villein*, and seize them to his own use. If, however, a *villein* bought lands or goods and sold them to another before the lord seized them, the lord's right was gone.‖ The lord might, in fact, rob, beat and chastise his *villein* at his will,¶ and he might also place him in the stocks, (which according to the opinion of Lord Chief Justice Bridgman was originally not intended as a place of punishment, but only as the constable's gaol to keep men in hold,)** and might bring an action against any one who presumed to liberate him against the lord's will. To shew that the punishment of the stocks was only for the base, we may quote the language of Shakspeare in King Lear, where he says—

> "Call not your stocks for me: I serve the king,
> "On whose employment I was sent to you."

The lord however might not in the chastisement of his *villein* maim him, or in other words, hurt or take away any member of the body, whereby the *villein* was made less able to defend himself, or offend his enemy, for then he should have an appeal of *Mayhem* against him, the life and members of every subject being under the safeguard and protection

* Tom's Law. Dic. tit. Fealty.
† William's Law Dic. tit. Villein.
‡ 3 Theirry, sec. 5, p. 504.
§ 1 Co. Lit. b. 2, c. 11, sec. 186.
‖ 1 Co. Lit. b. 2, c. 11, sec. 17.
¶ Les Termes De La Ley, tit. Villein.
** 2 Scriv. Cop. 688, n. a.

of the crown; to the end that they may serve the king and their country, when occasion shall be offered.* This appeal, to be effective, must have been brought in the name of the sovereign, to whom the lord was liable to make grievous fine and ransom. For in an appeal of *Mayhem*, a man could only recover damages, which in the case of a *villein*, the lord after execution might take again, so that the judgment in favour of the *villein* would have been of no benefit to the plaintiff; but when the appeal was brought at the king's suit it was otherwise.† In proof of the heinous light in which the law looked upon the destruction of a member of the body, which rendered the subject less able for the defence of the realm, we may refer to a case of voluntary *Mayhem*, (if we may so speak,) which is mentioned by Sir Edward Coke who states, that in his circuit, in anno 1, Jacobi Regis, in the county of Leicester, one Brown, a young, strong, and lustie rogue, to make himself impotent, thereby to have the more colour to beg, or to be relieved, without putting himself to any labour, caused his companion to strike off his left hand; and both of them were indicted, fined and ransomed.‡ Indeed by the ancient law of England, if the defendant in an appeal of *Mayhem* had been found guilty, the judgment against him had been that he should lose the like member to that which the plaintiff had lost by his means—so that if the plaintiff had lost a hand, the defendant also should lose one, et sic de cœteris.§ This punishment seems to have been based upon the Mosaic law of retribution recorded in the 21st chapter of Exodus, which gave eye for eye, tooth for tooth, hand for hand, and foot for foot. The children of *villeins*, where both parents were of that class, were doomed to the like state of hereditary bondage; and it was the same if a *villein* took a freewoman to wife and had issue between them, the issue were *villeins*, as the father still remained a slave as before, (except when he was fortunate enough to marry his own lady, a circumstance we should think of rare occurrence,) for then he became enfranchised for ever; but if a *neife* took a freeman to her husband their issue were free.‖ The *status* of the issue appears to have been grounded on the maxim of the common law that husband and wife are all one person, the existence of the wife being, as it were, merged in that of her husband during her coverture, so that the children followed, *ex necessitate*, the degree of the male.¶ The *neife* however, when she

* 1 Co. Lit. b. 2, c. 11, s. 194, "Ransome." † Ib. c. ‡ Ib.
§ 1 Co. Litt. b. 2, c. 11, sec. 194, "Ransome." ‖ Ib. sec. 187. ¶ Ib. sec. 187.

married a freeman was only privileged during the husband's life.* In the event of his death before her demise, she again reverted to the lord.† If children were born from a father who was *nativus* to one lord, and a mother who was *nativa* to another lord, such children were to be divided proportionably between the two lords.‡

Every *villein* however was able and free to sue all manner of actions *against* every person, except his lord,§ and he was competent to act as executor of a freeman, in case he was appointed to that office,|| and the lord could not take out of his possession the goods of the deceased.¶ But a *villein* was not eligible to sit on a jury (for every juryman must be *liber Homo*) and the bailiff who returned him on the pannel was amerced. Nor could a man who had been a *villein nativus*, even after he had been made free by his lord, be produced in court *against* a stranger to *deraign* a cause (that is, to be the champion to prove the matter in question), or *to make his law*, or *law wager*, as it has since been called, if it was objected to him that he was born in *villenage*.**

Having briefly shown the existence of *slavery* or serfdom during the Saxon era, and the substitution of *villenage* by the Normans, we shall proceed to state concisely, the means which the lord might pursue for the recovery of his *villein*, and then the mode by which the latter might obtain his liberty. And first as to the lord's right. When the lord claimed the inheritance of any *villein* who had fled from the manor to which he was *regardant*, or when he had departed from his lord, against the lord's will, the lord might, (previous to the Statute 25 Edw. III c. 18, which gave him a more summary remedy,) have a writ, called a writ *de nativo habendo*, directed to the sheriff of the county, in which the *villein* was supposed to be.†† This writ (which the sheriff was obliged to serve under the pain of attachment,) ran in the following form. "The king to the sheriff, &c., greeting,—We command thee that justly and without delay thou cause A. of C. to have B. his *villein* and fugitive, with all his chattells and his whole sequel, wheresoever he shall be found in thy Bailywick, unless he be in our demesne, who fled from his land after

* 1 Co. Litt. b. 2, c. 11, s. 187. † 21 Vin. Abr. tit. Villein, pa. 579, k. 2.
‡ Glanv. lib. 5, c. 6. 1 Reeve's Hist. of Engl. Law, c. 3, p. 99.
§ 1 Co. Litt. b. 2, c. 11, s. 189. || Ib. sec. 191. ¶ Ib. sec. 192.
** 1 Reeve's History of Engl. Law, c. 3, p. 99.
†† Fitzherbert's Natura Brevium p. 185 a.

the coronation of lord H. the king, son of king John, and we forbid upon our forfeiture, that no man him unjustly detain, &c."* When the lord sued out the writ of *nativo habendo* he had to enter a plaint before the sheriff of the county, setting forth how the party was his *villein*, and how that he had fled from him.† But this writ could not be had by a person who had merely an estate for term of life, or for years, in a *villein*, because it was in the nature of a writ of right to recover the inheritance in the *villein*.‡ By virtue of this writ the sheriff might seize the *villein*, and deliver him unto his lord, in case the *villein* confessed unto the sheriff that he was a *villein*; but if the *villein* alleged that he was a freeman, then it seems the sheriff ought not to seize him, but the lord ought to sue out a writ of *pone*, (which it will not be necessary to give at length,) the object of which was to remove the plea before the Justices of the Common Pleas, or before the Justices in Eyre. For the sheriff had no authority to determine the title of *villenage* in the county.§ But if the *villein* purchased a writ *de libertate probanda* before the lord had sued out the *pone* to remove the plea before the Justices, then the writ of *libertate probanda* was a supersedeas unto the lord that he proceed not upon the writ of *nativo habendo* till the Eyre of the Justices, or till the day the plea be adjourned before the Justices, and that the lord ought not to seize the *villein* in the meantime, and if the lord sued out a *nativo habendo*, and the *villein* purchased this writ of *libertate probanda*, by that, the sheriff should not proceed further in the writ of *nativo habendo*, but the whole plea should be adjourned before the Justices in Eyre, and then the writ of *nativo habendo* and the Record should be sent before the Justices in Eyre, and the lord should declare thereupon, and the *villein* should make his defence, and plead thereunto; and the *villein* should not declare upon the writ *de libertate probanda*, nor should anything be done thereupon. For that writ was but a *supersedeas* to surcease for the time, and to adjourn the Record and the writ of *nativo habendo*, before the Justices in Eyre. ||

As a matter of curiosity it may not be uninteresting to give the *villein's* writ, or writ of *libertate probanda*. It was in the following form :—

"The King to the Sheriff, &c. A. and B. her sister have shown us that "whereas they are free women, and ready their liberty to prove, F., claim-"ing them his *neifes*, vexeth them unjustly: and therefore we command you

* Fitzherbert's Natura Brevium, p. 186. † Ib. 187 a. ‡ Ib. 185 b.
§ Fitz. Nat. Brev. 187 a. || Fitz. Nat. Brev. 186 c.

"that if the afores. A. and B. shall secure thee their liberty to prove, then "put that plea before our Justices at the first assizes when to those parts "they shall come, because such like proof it belongeth not to thee to take, "and in the meantime the same A. and B. peace thereupon to have, cause "thou, and say to the afores. F. that then he be there, that plea against "the afores. A. and B. thereupon to prosecute, if he will, and have there "this writ. Witness, &c."*

When the lord pursued his remedy by writ of *neife* he had, in order to establish his claim to the *villein*, to bring with him two persons, at the least, who were of the *villein's* blood, that would confess themselves to be *villeins*,† otherwise the writ should abate, and the *villein* was for ever enfranchised. But in a *nativo habendo*, after the plea was removed by a *pone*, if the defendant in his proper person confessed himself to be *villein*, *that* was sufficient evidence of title, and the lord need not bring any proof thereof,‡ and by this confession, all his issue born afterwards were *villeins* and *neifes*, but not such issue as were born before.§ It seems, however, that the cousin female could not be brought to prove the male *villein*,|| nor could a *neife* who married a freeman be produced to prove *villenage* during the coverture. So the person who claimed to be free, was to bring into court his nearest relations, descended from the same stock with himself: and if *their* freedom was recognised and proved in court, *this* was construed in his favour, so as to free him from the yoke of servitude.¶

If a *villein* fled to the lands of the crown, and remained there a year and a day, without claim or seizure by the lord, the lord could not have a writ of *nativo habendo*, or seize him, so long as he continued in the King's demesne, and the reason of this was in respect of the service which he did to the King in ploughing and tillage and other labours of husbandry for the King's benefit;** but if the *villein* had not remained within the King's possessions for that period, then the lord might have such writ unto the sheriff, which ran as follows:—

"The King to the Sheriff, &c. We command thee that unlesse A., whom "B. claims to be his *villein* and fugitive in thy county by our writ, hath "remained in our demean of S. for one year and a day without challenge, "let not the plea continue in the county aforesaid, because he hath re-"mained in our demean lesse time. Witness, &c."††

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* Fitz. Nat. Brev., 137 (f). † Ibid 189 (h). ‡ Fitz. Nat. Brev. 189 (h.)
§ 21 Vin. Abr. Tit. Vill. p. (a) 573, 3 and 4.
|| Fitz. Nat. Brev. 189 h. marg. ¶ 1 Reeve's Hist. of Eng. Law, c. 3, p. 143.
** 1 Co. Litt. b. 2, c. 11, sec. 204, 137. †† Fitz. Nat. Brev. 190 a.

If, however, the *villein* remained in any other manor than in ancient demesne, which was in the possession of any other lord than the King, and there stayed a year and a day, or for many years without any claim made by the lord, notwithstanding that, the lord might take and seize him or have a special writ of *nativo habendo* against the *villein*, directed unto the sheriff for his removal.* By the statute 25 Edward III, ch. 18, the lord might obtain possession of his *villein* in a more summary way than by resorting to the writ of *nativo habendo*, for that act gave him power to seize the person of his *villein*, and to allege *villenage* in any action which might be brought against him by the *villein*, although the latter had a writ *de libertate probanda* depending, which was adjourned before the Justices in Banco, or the Justices in Eyre.†

The lord might also under the statute of 1 Richard II, c. 2, have a writ to the Sheriff to assist him to distrain his *villeins*, which writ was as follows:—

"The King to the Sheriff, &c. We command thee that thou aidest A. "of F., where he is not sufficient to distreyn his *villeins* of N., to do him "the custom and services due and accustomed. Witness, &c."‡

If the King's *villeins* escaped out of the manor, a special writ was directed unto the Sheriff of the county to inquire by the oaths of honest and good men, the names of them, and where they abode, and to make them return and abide within the manor as before.§

Having shown the process by which the lord might seize or obtain possession of his *villein*, we shall proceed to point out the means which the law provided for the *villeins*' manumission. This might, to use the language of the author of "Les Termes de la Ley" be done in two sorts, viz., one was a manumission *expressed*, the other a manumission *implied*. The first, a manumission *expressed*, was when the the lord made a deed to his *villein* to enfranchise him by the word *manumittere*, which was as much as to say, to let one go out of another man's hands or power. The manner of manumitting or making free in old time, most usually was this. The lord (in the presence of his neighbours) took the bondman by the head, saying, "I will that this man be free," and therewith shoved him forward out of his hand, and by this he was free.|| But if two had a *villein*

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* Fitz. Nat. Brev., 190 a † Ibid 186 c. ‡ Ibid 191 c.
§ Fitz. Nat. Brev. 191 e. || Les Termes de la Ley, tit. Manumission, p. 436.

in common, and one of them made a manumission, he should not be made free against both.* Scott, in his romance of Ivanhoe, gives the following interesting description of the manumission of the Swineherd Gurth, by his master, Cedric of Rotherwood.

"'But uncle, (said the jester, addressing the Saxon) if you would indeed "pleasure me, I pray you to pardon my play-fellow Gurth, who stole a "week from your service to bestow it on your son.' 'Pardon him,' ex-"claimed Cedric, 'I will both pardon and reward him. Kneel down "Gurth.' The swineherd was in an instant at his master's feet. '*Theow* "and *Esne* art thou no longer,' said Cedric, touching him with a wand. "'*Folk free* and *sackeless* art thou in town and from town, in the forest as "in the fold; a hide of land I give to thee in my steads of Walbringham, "from me and mine to thee and thine, aye and for ever; and God's mali-"son on his head who this gainsays.' No longer a serf, but a freeman and "a landowner, Gurth sprung upon his feet, and twice bounded aloft to "almost his own height from the ground. 'A smith and a file,' he cried, "to do away the collar from the neck of a freeman!—Noble master! double "is my strength by your gift, and doubly will I fight for you! There is a "free spirit in my breast; I am a man changed to myself and all around. "Ha, Fangs,' he continued,—for that faithful cur, seeing his master thus "transported, began to jump upon him, to express his sympathy—'knowest "thou thy master still?' 'Ay,' said Wamba, 'Fangs and I still know thee, "Gurth, though we must needs abide by the collar; it is only thou who "art likely to forget both us and thyself.' 'I shall forget myself indeed, "ere I forget thee, true comrade," said Gurth; "and were freedom fit for "thee, Wamba, the master would not let thee want it.' 'Nay,' said "Wamba, 'never think I envy thee, brother Gurth; the serf sits by the "hall fire when the freeman must forth to the field'—and what saith Old-"helm of Malmsbury, 'better a fool at a feast than a wise man at a fray.'"†

Implied manumission, or manumission without the word *manumittere*, was when the lord made an obligation to his *villein*, to pay him money at a certain day, or granted him an annuity, or leased land to him by deed for years or life, and in divers like cases the *villein* was thereby made free, for this was dealing with his *villein* on the footing of a freeman.‡ It was in some instances giving him an action against his lord, and in others vesting in him an ownership entirely inconsistent with his former state of bondage. So also if the lord brought an action of *debt* or *account*, or of *covenant*, or of *trespass*, or of such like *against* his *villein*, this enfranchised him; for, as the lord might have a short remedy against his *villein*, by seizing his goods, (which was more than equivalent to any damages he

* Ibid, tit. Villein. p. 574. † Scott's Ivanhoe, vol. 3, c. 2, p. 38.
‡ Les Termes de la Ley, tit. Manu., p. 436.

would recover,) the law, which is always ready to catch at anything in favor of liberty, presumed that by bringing this action he meant to set his *villein* on the same footing with himself, and therefore held it an *implied* manumission;* and it is commonly said three things are favored in law, viz., life, liberty and dower.† But if the lord sued his *villein* by appeal of felony, when he was indicted of the same before, this did *not* enfranchise the *villein* though the matter of appeal was found against the lord; for the lord could not have the *villein* to be hanged without such suit.‡ A *villein* also became *ipso facto* free, if he had remained a year and a day in any *privileged* town, and was *received* into their *gylda*, (or guild, as it has since been called,) as a citizen of the place.§ So, if the *villein* brought an action against his lord, and the lord *emparled*, or made a full defence *before* he made a protestation of the *villenage*, *that* was held to be an enfranchisement, though he made a protestation afterwards.‖

Notwithstanding the law has ever been favorable to the liberty of the subject, it is probable that *villenage* would have existed in this country for a much longer period than it did, had not the power of the Romish Church been brought to bear on the hearts and consciences of those who held their fellows in bondage, for it is a remarkable fact, that no legislative enactment prior to the Stat. of 12 Charles II, c. 24 (by which *title* and *tenure* in *villenage* were *incidentally* abolished), was ever passed for the express liberation of the *villein* population.¶ Even *Magna Charta* itself, which either granted or secured very important privileges to those orders of the kingdom that were already possessed of freedom, viz., to the clergy, the barons and the gentry, was all but silent as to the serf, and left the inferior and greater part of the people still to be treated as slaves.** The Romish Church, however (to her honor be it spoken), became the advocate of the slave, and used all the influence which she then possessed with the laity for the manumission of the *villein*. And with such success were her efforts crowned, that *villenage* had nearly ceased to exist in the reign of king Edward VI. For Sir Thomas Smith (who was secretary to that monarch) testifies "that he never knew any *villein in gross* throughout the realm; and the few *villeins regardant* that

* 2 Stew. Bl., c 6, p. 94. † 1 Co. Litt., b. 2, c. 11, sec. 193.
‡ Litt. 208, 21 Vin. Abr. tit. Villein: p. 582, p. 5, 6.
§ Glanv: Lib. 5, c. 5, 1 Reeve's Hist. Eng. Law, c. 3, p. 100, 11 Mod. Rep. 189.
‖ 21 Vin. Abr. tit. Vill. p. 583 (o.) 1, 5. ¶ Barrington on the Statutes, 301.
** Wright's Golds. Hist. Eng., c. 11, p. 90.

"were then remaining were such only as had belonged to bishops, monas-
"teries, or other ecclesiastical corporations, in the preceding times of popery.
"For the holy fathers, monks and friars had, in their confessions, and
"especially in their extreme and deadly sickness, convinced the laity how
"dangerous a practice it was for one christian man to hold another in bond-
"age; so that temporal men, by little and little, by reason of that terror
"in their consciences, were glad to manumit all their *villeins*."* †

By the means to which we have adverted, *villenage* gradually ceased to exist in England. The last case of that nature (Pigg *v.* Caley) recorded in our courts of justice, occurred in the fifteenth year of the reign of king James I., in which an action of trespass was brought by P. against C. for taking his horse, &c., to which C. pleaded that he was seized of the manor of D., to which P. was a *villein regardant*, and that he and all those whose estate he had. had been seized of the plaintiff and his ancestors. The plaintiff replied that he was free, &c., *absque hoc*, that the defendant, &c., were seized of the plaintiff, &c., as of *villein regardant;* and the issue was found for the plaintiff. And upon motion in arrest of judgment, it was ruled that the traverse was well taken. And by Hubbard, if a man had not *seizin* of a *villein in gross* within six years, he should be barred by 32 H. VIII of limitations in *nativo habendo:* for liberty is favored; but yet of a *villein regardant*, the *seizin* of the manor to which, &c., was sufficient *seizin* of the *villein.*‡ Long, however, subsequent to the extinction of *villenage* it was thought that the owners of foreign or black slaves might legally hold them in bondage in this country; and the following curious advertisements, republished in 'Notes and Queries,' will in some degree tend to shew the feeling of the age on this subject, viz.· "A black
"boy of about 15 years of age, named John White, ran away from Col.
"Kirke on the 15th instant; he has a silver collar about his neck, upon
"which is the Colonel's coat of arms and cipher; he has upon his throat
"a great scar; bare in habit. Whoever brings the aforesaid boy to Col.
"Kirke's house, near the privy garden, will be well rewarded." London Gazette, March, 1685.

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* 2 Stew. Bl. Com , c. 6, p. 96.

† Some few *villeins regardant* appear to have been still existing on the domains of the Crown in the early part of the reign of Queen *Elizabeth*. Barrington on the Statutes, page 308, says, he found in Rymer a Commission of hers, in the year 1554, directed to Lord *Burghley* and Sir *Walter Mildmay*, for enquiring into the lands, tenements and other goods of all her *bondmen* and *bondwomen* in the counties of *Cornwall, Devon, Somerset* and *Gloucester*, such as were by *blood* in a *slavish* condition, by being *born* in any of her *manors*, and *to compound with all or any such bondmen or bondwomen for their manumission and freedom.*

‡ 21 Vin. Abr. tit. villein, p. 586, 13.

Term, in the 4th of Queen Anne (1706), that *trover* would not lie for a negro. In that case, an action of *trover* was brought for several things, and among the rest, *de uno Ethiopâ (vocat. a negro)*, and on not guilty pleaded, a verdict was found for the plaintiff, and several damages, and as to the negro £30; and it was moved in arrest of judgment that *trover* lay not for a negro, for that the owner had not an absolute property in him—he could not kill him as he could an ox. On the *contrary*, it was said, a property implies the right of having, and enjoying, and disposing, but it does not always imply a power to destroy; that this power holds in beasts, fowl, and fish, which were made the property of mankind by the act of God, and have a natural existence, but not in things incorporeal, which consist in *jure tantum*, for this being a property *ex instituto* only, the owner has only a power according to the measure of this instituted right. And it was instanced in the case of a common, a way, and a ward. On a *ca. sa.* the plaintiff has an interest in the body of the prisoner as a pledge, not to sell, but to keep, and it goes to executors. Hob. 61. In a servant to work him, in a captive to sell him. Reg. 102, F. N. Br. 88 a. B. N. C. 295, Bro. Property 38, 1 H. VI., c. 5, in Rast. 219, Cott. Ab. 460. That the writ *nativo habendo* must lay the *explees* of a *villein* in working and taxing him at will. Co. Ent. 406. That by the law of Moses a man may be a slave, and a slave was a chattel, his master's money. Exod. xx. 21. That by the same reason there may be a *servus prædialis*, i.e., a *villein*. One may be a *servus personalis*, and that first a captive, and afterwards a *villein*. Hob. 97.; Brownl. 78. A *villein in gross* is a chattel, for he is of a perishable nature, and cannot endure for ever. So is Fitz. Discontinuance 16, Br. Villein 60. As *villeins* are *regardant* to land, it is a different thing, and in that respect they are inheritances, and so are the charters. Every *villein* is intended in law *regardant*, the writ in the register therefore supposes him to be *nativum suum*, but before he was a *villein*, he was a captive, and then a chattel. Lastly, it was insisted, that the court ought to take notice that they were merchandise, and cited 2 Cro. 262. The case of Monkeys, 2 Lev. 201, 3 Keb. 785, 1 Inst. 112. If I imprison my negro, a *habeas corpus* will not lie to deliver him, for by Magna Charta he must be *liber homo*. 2 Inst. 45. *Sed curia contra*, men may be the owners, and therefore cannot be the subject of property. *Villenage* arose from captivity, and a man may have trespass *quare captivum suum cepit*, but cannot have *trover de gallico suo*. And the court seemed to think

that in trespass *quare captivum suum cepit*, the plaintiff might give in evidence that the party was his negro, and he bought him.*

Previous, however, to the decision of the last-mentioned case, it was adjudged by the Court of B. R., in the case of Chamberlain *v.* Harvey, which was heard in Trinity term, 7 William III. (1696), that an action of *trespass* would not lie for taking away a negro.

In this case an action of *trespass* was brought against the defendant for taking and carrying away an Ethiopian *(Anglice vocat.* a negro*)* of the value of £100, and keeping the plaintiff out of possession of him, so that the plaintiff lost the use of the said negro. Upon not guilty pleaded, the jury gave a special verdict, by which they found that the negro had been baptised after the taking, and the matter was argued upon that point, viz., whether the baptism was a *manumission*, and as to that the court gave no opinion, but said "an action of *trespass* would not lie, because a negro "could not be demanded as a chattel, neither could his price be recovered in "damages in an action of *trespass*, as in case of a chattel; for he was no "other than a slavish servant, and the master could maintain no other "action of *trespass* for taking his servant, but only such which concluded "*per quod servitum amisit*, in which the master should recover for the loss "of his service, and not for the value, or for any damages done to the "servant."†

Notwithstanding the adverse decision of Lord Hardwicke, the question was again mooted in the King's Bench, Trinity Term, 1772, in the case of James Somersett, a negro, against his former master, Charles Stewart, Esq., upon the return of a *habeas corpus*, which suit was promoted by that eminent philanthropist, the late Granville Sharpe, Esq., and on the 22nd day of June in that year, Lord Mansfield, C.J., pronounced the unanimous sentiments of the whole bench. His lordship first stated the return, and then spoke to the following purport. "We pay due attention to the "opinions of Sir Philip Yorke and Mr. Talbot, in the year 1729," (which his Lordship quoted at length without the least comment, and added) "We "feel the force of the inconvenience and consequence that will follow the "decision of this question, yet all of us are so clearly of one opinion upon "the only question before us, that we think we ought to give judgment "without adjourning the matter to be argued before the Judges, as is "usual in the *habeas corpus*, and as we at first intimated an intention of "doing in this case. The only question then is, is the cause returned suffi-"cient for remanding him? If not, he must be discharged. The cause re-"turned is, that the slave absented himself, and departed from his master's

* 2 Salk. Rep. 666 (2). † Carth. Rep. 396.

"service, and refused to return and serve him during his stay in England. "Whereupon by his master's orders he was put on board the ship by force, "and there detained, in secure custody, to be carried out of the kingdom "and sold. So high an act of dominion must derive its authority, if any "such it has, from the law of the kingdom wherein it was executed. A "Foreigner cannot be imprisoned here on the authority of any law exist-"ing in his own country. The power of a master over his servant is "different in all countries, more or less limited or extensive. The exercise "of it therefore must always be regulated by the laws of the place where "exercised. The state of slavery is of such a nature that it is incapable of "being now introduced by courts of justice upon mere reasoning, or by "inferences drawn from any principles, natural or political. It must take "its rise from positive law, the origin of it can in no country or age be traced "back to any other source. Immemorial usage preserves the memory of "positive law long after all traces of the occasion, reason, authority, and "time, of its introduction are lost, and in a case so odious as the condition of "slaves, it must be taken strictly: tracing the subject to natural principles "the claim of slavery can never be supported. The power claimed by this "return was never in use here, nor acknowledged by the law. No master "was ever allowed here to take a slave by force to be sold abroad, because "he had deserted from his service, or for any other reason whatever. We "cannot say that the cause set forth by this return is allowed or approved "of by the laws of this kingdom, and therefore the man must be "discharged." *

By this decision, it became our "pride and boast," that

> "Slaves cannot breathe in England, if their lungs
> "Receive our air, that moment they are free;
> "They touch our country, and their shackles fall—
> "That's noble, and bespeaks a nation proud
> "And jealous of the blessing." †

Before concluding, it may be remarked that the *copyhold tenures* of the present day are the remains of *villenage*. That the *villein* class formed no small part of the population of the country, we may infer from the language of Sir Edward Coke, (in the case of Bagnall *v.* Tucker, 2, Brownlow), where he is reported to have said that a *third* part of the kingdom was *copyhold*. The tenure by which *villeins* held their lands was that of pure *villenage*; the services were base and uncertain, and as they might be dispossessed at any time, they were said to hold "*at the will of the lord.*" The acquiescence, however, of lords of manors to their *villeins* holding their lands, so long as they performed their services, and their permission to their children to succeed them, advanced the pretensions of the *villeins* in opposition to the right of the lords, and gave them a kind of presumptive or customary right to their possession, which in time was taken notice of by courts

* Elmes' Clarkson, p. 37. † Cowper.

of justice, and under their sanction became at length a part of the common law. In proof of this we cannot do better than quote the language of the late lord Wynford, when Chief Justice of the Common Pleas. "It "is to lawyers in Westminster Hall, and I speak it with pride, that *slaves*, "(for such was the state of *men* in pure *villenage*), are indebted for the "pernancy of their property, and for that right in society which pernancy in "property has conferred upon them. It is by the establishment of customs "referable to *copyholds* as established in courts of justice that this perma-"nent interest has placed *copyholders* in the happy situation in which they "are now found. The *copyholder* now has a present interest in his estate "so long as he performs his services, and the Lords have certain rights and "dues, and so long as the *copyholder* performs his services, and pays the "dues, he has the same permanent interest in his estate as if it were free-"hold."*

And now, having endeavoured to prove the existence of *slavery* during the Saxon era, and the substitution of *villenage* after the conquest, and also to trace the *latter* until it became extinct under the benevolent influence of the christian religion, allow us to express a hope that the subject has not been altogether devoid of interest. The discussion of it may have tended, in some degree, to divest the mind of many erroneous ideas, as it has shown us that our country has not always been (what we had fondly, or perhaps we may say, somewhat vainly hoped), "the land of the brave and the *free*," but has established a period in her history when

> "Shivering wretches at the curfew's sound,
> "Dejected, shrunk into their sordid beds,
> "And, through the mournful gloom of ancient times,
> "Mused sad, or dreamt of better."†

Happily, however, those days of outrage and misrule have gone by, and our lot has been cast in a milder and more glorious age, when the bright shield of freedom alike protects the cot of the peasant, and the palace of the prince. The whole world, with the exception of a portion of the United States of America, and a few other nations, has, following the example of Great Britain, given manumission to the slave. From the directing sceptre to the obedient spade, our great and glorious country hath proclaimed freedom to her children, who now live under "laws by which," as Lord Bacon says, "the king has the justest prerogative, and the people the best liberty."

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* 1 Scriv. Cop. 43. † Thom. Poem Lib. part 4, p. 282.

ON THE SOLAR ECLIPSE OF MARCH 15TH, 1858, AS SEEN AT BURNLEY.

By T. T. Wilkinson, F.R.A.S.

(READ 18TH MARCH, 1858.)

Since this locality appears to have been peculiarly favoured with regard to opportunities for observing the eclipse, perhaps the following notes may not be unacceptable to the society.

1. At the time of commencement here the sky was totally obscured, and no hope existed that the eclipse would be seen at any period of its duration.

2. Shortly before twelve o'clock, however, the stratum of clouds began to appear less dense, and at five minutes past twelve the disc of the sun became distinctly visible through the haze.

3. After an interval of fifteen minutes, several openings were formed through the clouds, and an opportunity was afforded of observing the colour of the sky. This at first seemed to be somewhat of a dark purple hue, but it shortly changed into what an artist would call a dirty grey. This was most evident around the edges of the openings, whilst the centre of each exhibited a near approach to a deep black, and seemed to project forward from the rest of the opening.

4. At twenty-five minutes past twelve the clouds almost cleared away from the vicinity of the sun, and for about ten minutes the eclipse was observed at the greatest advantage. A deep gloom gradually settled upon the face of nature, and at the period of greatest obscuration it resembled the evening twilight, when the sun has disappeared behind a thick bank of clouds. The sparrows forsook their usual haunts, and even the poultry ceased to seek for food.

5. From this time to near the close the scudding haze occasionally obscured the sun; but at rapid intervals the progress of the eclipse could be observed without much inconvenience. Indeed, the hazy clouds served as a medium through which the sun could be seen without the use of smoked or coloured glasses; for it was only when these were absent that

glasses became necessary. Many persons observed the eclipse most effectually by turning their backs upon the sun and noting his phases as reflected from the apparently dark windows of our shops.

6. When dense rainy clouds passed the sun a curious phenomenon always took place. No sooner did their highly-charged edges appear to touch the sun's disc than the bright crescent instantly became magnified to three or four times its real breadth; the dark body of the moon appeared to start back, and a flood of light was immediately dispersed through the atmosphere, which for the time almost dispelled the prevailing gloom. The thin margins of the clouds evidently acted the part of a reflector, and the sudden changes from dim twilight to almost bright day were at once remarkable and beautiful in the extreme.

7. At the instant of greatest obscuration, the sun was hidden from view by a dense mass of passing clouds; but a few minutes after they cleared away and showed that the crescent of light had changed from south-east to south-west. An appearance resembling Baily's beads was visible at the extremities of the cusps on several occasions, but these appearances were probably magnified by the watery state of the atmosphere. A slight shower of rain had just fallen, and the black inky appearance of the water on the tops of the houses was very extraordinary. This, together with the partial absence of light, produced a sensation of chilliness which would probably not have been felt so sensibly had one of the exciting causes been absent.

8. No difficulty was experienced in reading ordinary print at the usual distances at any time during the eclipse, but placards on the walls became indistinct at a distance of twenty or thirty yards, just as in the evening twilight.

9. At thirty-eight minutes past one the sun became again totally obscured by dense clouds, and no further observations could be made. Heavy rain fell during most of the afternoon, and the end of the eclipse could only be inferred from the presence of the usual amount of light and heat.

ON THE SOLAR ECLIPSE OF MARCH 15TH, 1858, AS SEEN NEAR OXFORD.

By J. T. Towson, F.R.G.S., and
T. Sansom, A.L.S.

(READ 18TH MARCH, 1858.)

The station selected for viewing the eclipse on Monday last, was the open ground at the northernmost part of Blenheim Park, Oxford. The morning was moderately bright until forty-five minutes past ten o'clock, when light clouds began to pass over the face of the sun. These gradually increased, and about the period of the first contact the sun was frequently obscured for intervals of a few seconds. At thirty-five minutes one second past eleven all eyes were directed towards the sun. A small telescope of one-and-a-half inch aperture had been previously fixed in position, and with this instrument the first contact was observed to take place at forty minutes fifty-seven seconds past eleven, Greenwich mean time, but it was at least a minute later before it was observable with the unassisted eye. The eclipse now increased rapidly, and by fifty minutes fifty-nine seconds past eleven it had made considerable progress. From fifty-six minutes past eleven the sun was overshadowed with clouds for a period of about five minutes, and we only caught occasional glimpses as the clouds rapidly passed over its face. At fifty-seven minutes past eleven it was seen, and at about nine minutes after twelve it was visible for some time, being only partially obscured by light and fleecy clouds, and at twelve minutes fifty-five seconds past twelve we obtained an excellent view of the sun. At this period the spots on its surface were very distinct. Several dark clouds now intercepted our view, and we almost despaired of seeing it again, but from thirty-four to thirty-eight minutes past twelve very good views were obtained. Heavy clouds still continued to roll on, and we were unable to make any further observations, the sun remaining entirely obscured until after the eclipse was over.

Towards the approach of the greatest obscuration, a very sensible darkness was observed, also great chilliness; the darkness appeared to steal upon us with the rapidity of twilight in the mountainous valleys of Wales and Scotland. Distant objects appeared dim, while those in the immediate neighbourhood were perfectly distinct. At the darkest period the smallest print could be read with great ease. It was calculated that the greatest obscuration would commence at fifty-nine minutes one second past twelve, and terminate at fifty-nine minutes eleven seconds past twelve, and there can be no doubt this calculation was correct, for immediately after that time the light increased with the greatest rapidity, imparting a genial warmth and cheerfulness to the landscape and all around us. This sudden and rapid increase for the first five minutes was most remarkable, and to us unnatural. It appeared to roll from the south-west horizon rather than come from the heavens, and the light seemed to flicker or tremble into existence. This unsteadiness was only noticed for the first few minutes after the annulus had passed.

In the park, large herds of deer were feeding; but about a quarter to one o'clock they commenced to herd together, as usual at sunset, retreating rapidly across the park towards their night quarters. This they had nearly accomplished by the time of the greatest obscuration, but immediately after the light began to increase they returned to their feeding ground. Near where we were standing was a rookery, and most of the rooks had retired to roost by the time of the greatest darkness. Mr. Towson and others, on returning to the railway station about three o'clock in the afternoon observed, in a rookery near Woodstock, many of the birds still at roost with their heads under their wings.

We were greatly assisted by our friend Mr. Edward Moore, B.A., of Pembroke College, Oxford, who accompanied the members of the Historic Society to Blenheim. His observations with the thermometer were carefully made, and are of great value, as showing differentially the state of the temperature. They were made with a dry bulb thermometer, suspended about three feet above the ground, in the open air.

HOUR.	STATE OF TEMPERATURE.
At 11h. 40m. 16s.	52.5
At 0h. 9m.	51.0

HOUR.	STATE OF TEMPERATURE.
At 0h. 16m.	51.0
At 0h. 35m.	50.5
At 0h. 50m.	49.5
At 0h. 58m.	49.0
At 1h. 1m.	48.2
At 1h. 20m.	49.0
At 1h. 30m.	49.5
At 1h. 40m.	50.0
At 1h. 50m.	50.5
At 1h. 55m.	51.3

In the *Times* of Tuesday, a letter appeared from Mr. John Yeatcs, containing observations made at Fotheringay Castle Mound, Northamptonshire, in which he states that a considerable change in the magnetic declination took place: although not anticipating such a phenomenon, arrangements were made by Mr. Towson which would have detected any such change in the variation of the needle, had it taken place. In order to direct to where Jupiter and other heavenly bodies were to be looked for, pairs of staves were placed in such positions as to direct the eye of the observer to the various points in the heavens where they would appear at the time of the greatest obscuration. For this purpose a compass was fixed on a tripod; and as the wind was blowing, frequent reference was made to the compass during the progress of the eclipse, to observe that no disturbance of the sticks had taken place, and up to the time of within a few minutes before the greatest obscuration, when one of our party unfortunately removed the compass, the staves intended to direct the eye to Jupiter continued to bear by the compass S. 29 E., and the needle had not shifted on the card.

Since these observations were written we have received a most interesting letter from Mr. Moore, and as it contains some very valuable information we take the liberty of reading it to the society:—

"Pembroke College, March 16th, 1858.

"My dear Mr. Sansom,—Having made several enquiries yesterday from various observing parties about the eclipse, and attended a special meeting of the Ashmolean Society held on the subject, I lose no time in

sending you a few particulars which I think may be interesting to you. We may congratulate ourselves on seeing far more of it than many in this neighbourhood. The best view of all was obtained on the bridge in Woodstock Park. One of the observers at the Observatory has just told me that some friends of his saw the annulus surrounded with a corona of light, with brighter rays darting out from it in several places. This is the only case in which any one professes to have seen it, and as you see, the information is but second hand.

"As regards the temperature, I think you will consider the inclosed diagram presents a very interesting and remarkable result. Professor Phillips very kindly allowed me to take it away after it had been exhibited to the meeting, and I was thus able to copy it at leisure and with considerable accuracy at home. The three thermometers, he stated, coincided exactly at the moment of greatest obscuration. The total variation of his clear bulb thermometer, 51.5 to 47.4 (as nearly as I can judge), coincides exactly enough with ours (52.5 to 48.3), which is interesting. From thirty to forty-five minutes past eleven there were gleams of sunshine, which caused slight irregularities in the fall of the mercury, and after fifteen minutes past two a fall of rain rendered the remaining observations useless. I told Professor Phillips the principal purpose for which I wished a copy of his observations, and he requested that if you made any use of them you would say that they were planned and executed by him and Professor Walker conjointly. I should have said that Professor Phillips' expedition was at Somerton, about a mile beyond Heyford, on the central line. As regards amount of light, some photographic paper was exhibited, different parts of which were successively uncovered at intervals of fifteen minutes (I think), in which the central part was very slightly tinted indeed, and presented a most marked contrast to the surrounding portions. I enclose some observations read out upon the amount of light, which you may find it interesting to compare with ours. Two things every single observer was particularly struck with wherever they were situated: (1), That the darkness at the maximum came on by jerks or jumps, as Professor Phillips described it; and (2) that the return of light was apparently much more rapid than the loss of it. The former was not explained; the latter was suggested to have been the result of the greater sensitiveness of the iris of the eye. I dare say you remember the same fact being observed by all of

us. The spots on the sun were observed yesterday with the naked eye, and I myself saw them this morning (of course with the help of smoked glass). * * * * *

"Yours very truly, EDWARD MOORE."

OBSERVATIONS OF PROFESSORS PHILLIPS AND WALKER AT HEYFORD, REDUCED FROM THE TABULAR FORM REFERRED TO IN MR. MOORE'S LETTER.

Hour.	No. 1.	No. 2.	No. 3.
11½	58.0	51.5	49.0
11¾	55.0	50.0	48.9
12	54.5	49.5	48.5
12¼	52.0	49.0	48.3
12½	50.0	48.6	48.1
12¾	49.3	48.5	48.0
1	47.4	47.4	47.4
1¼	48.0	47.5	47.5
1½	48.7	47.9	47.6
1¾	51.0	49.5	48.0
2	51.6	49.9	48.2
2¼	52.2	50.5	49.0

N.B.—No. 1, Professor Phillips's radiating thermometer (in the sun).—No. 2, Professor Phillips's white bulb thermometer (in the sun).—No. 3, Professor Walker's minimum thermometer (in the shade).

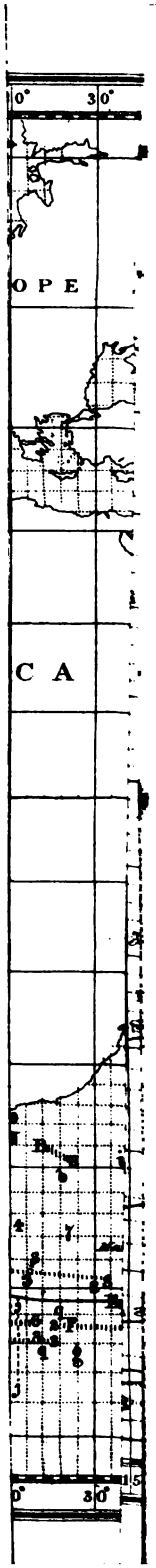
DIMINUTION OF LIGHT OBSERVED BY CAPTAIN BURROWES FROM THE TOP OF THE OBSERVATORY.

0h. 4m. Change perceptible.
0h. 44m. Clouds more lowering.
0h. 54m. Some distant objects became invisible; loss of light very perceptible.
0h. 57m. Darkness that of first dawn.
0h. 58m. Sudden darkening.
0h. 59m. Lighter again; light increasing rapidly.

Another observer (at Somerton) stated the darkness at the maximum to

be exactly equal to that at five minutes past six, p.m., yesterday. He also remarked the disappearance of some distant objects.

NOTE.—It is interesting to observe that on our return from Oxford we met at Birmingham the Rev. Spencer Percival Mansel, of Shrewsbury, and his son; they were stationed on the railway bridge at Woodstock, and, by the aid of a good binocular telescope, were fortunate enough to obtain for a few seconds only, a view of the perfect annulus. This is the only instance, as far as we know, of its having been seen.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CA
0°
30°

ICEBERGS IN THE SOUTHERN OCEAN.

By J. T. Towson, F.R.G.S.

(Read 19th November, 1857.)

Having during the last ten years directed a very considerable amount of attention to the subject of shortening the time occupied in voyages to and from Australia, I have taken a very great interest in every matter calculated to affect the risk attendant on these voyages. It was well-known that the Southern ocean was sometimes visited by icebergs, but this fact was not regarded as considerably increasing the danger of navigating these seas. Nor did I meet with any complaint that the new route I had aided in tracing out was more encumbered with icebergs than the old track, until the latter months of 1854, six years after the new route was adopted. During the months of November and December, 1854, and the first four months of 1855, very alarming accounts were forwarded to me of ice impediments, both on the outward and homeward passage. Naturally I felt especially called on to obtain all the information in my power, and to place it before the practical mariner in the form best suited to aid him in providing for the safety of his ship. Since this matter was one that would admit of no unnecessary delay, as early as May, 1855, I read, before the Liverpool Literary and Philosophical Society, the results of my investigation, and printed and circulated them widely amongst the masters commanding ships bound for Australia. On that occasion I not only pointed out the region especially dangerous from ice, but I requested of ship-masters the favour of returning to me accounts of all the ice they met with in the Austral seas. This request has been responded to in a spirit as creditable to the ship-masters of Liverpool as it has been flattering to myself. It is rather surprising that, after three years' investigation, I have so little, calculated to be of practical value, to add to the remarks previously published, although the data have been exceedingly extended. I have to acknowledge the aid afforded me by the records of several American gentlemen connected with the Seal trade of New South Shetland; of Luit. J. Van Gogh, Director of the Marine Department of the Royal Netherland Meteoro-

logical Institute; and of officials of our own Government, as well as those of the captains of Australian vessels to whom my appeal was addressed. Further, I have to acknowledge the services of several passengers, who have furnished me with sketches of icebergs, and the kindness of a lady-passenger on a homeward voyage of the "Lightning," in drawing for me a beautiful sketch of an extraordinary iceberg, 420 feet high; this is also admirable as a work of art. I have also availed myself of information afforded in the published journals of Captains Cook and Furneaux, and other officers engaged in voyages of discovery, by which means I have been enabled to carry back my investigation to 1772.

Ice of the Polar Seas may be divided into two classes—sheet ice and icebergs. These are quite distinct in their origin. Sheet ice is met with in different forms, which, however, are but various conditions of ice arising from a common origin,—in fact, the same ice is found at different times, under all the varied forms of ice-fields, ice-floes, pack, stream, drift and brash ice. All these are the result of one year's frost, and the extent and depth of sheet ice depend generally on the intensity of the previous winter's cold, and the circumstances connected with the succeeding season, which regulate the breaking up of the frozen surface. The return of the milder season gradually separates the ice into enormous fields, which are cast adrift on the ocean. Some of these in the Arctic region have been known to have an area of more than one hundred square miles. They vary from three to thirty feet in thickness. When broken into smaller sheets they are termed floes. When reduced to fragments crowded together they form what is termed pack ice; this, when elongated, is called a stream; and when further separated, it is known by the names of drift and brash ice,—the latter term being applied when the pieces have been ground down by abrasion, or have lost all the characteristics of their original condition by the thawing action of a milder climate. Icebergs, however, differ altogether both in appearance and origin from the kinds of ice already described. Towering like precipices and pinnacles, varying from one hundred to a thousand feet above the surface of the sea, in some directions they assume the appearance of chalk cliffs, but near the edges of a fracture they exhibit in the sun a translucent appearance of emerald green. Between the spires and ridges at their summits are pools, and in some cases we may term them lakes, of azure blue. Icebergs are not the produce of one season; on the contrary, there is reason to believe that these masses commenced their

formation at a period equally remote with that of the origin of some of our tertiary rocks.* They are of the same nature as the glaciers of the warmer regions of the earth; but instead of being melted in the valleys, they are pressed forward into the ocean till at length the water is sufficient to float them, and immense blocks are broken off. This process has been termed by the Greenland whale fishermen, the "calving" of an iceberg.

Drift ice, and all the other varieties of field ice, not only have a more recent origin, but they are of a less enduring character when drifted into the warmer climates. When carefully examined they are found to consist of crystals of ice and crystals of marine salts, aggregated together, the salt being separated from the water by the process of freezing. It is a well-known fact, that when small particles of ice and salt are mingled together, they will dissolve at a much lower temperature than that at which ice will dissolve; consequently icebergs are found at a much lower latitude than drift ice. Generally drift ice is not to be met with in the southern oceans at a lower latitude than 58°, and, in that region, only in the Austral winter months from April to September inclusive. In one region, to which I shall more particularly refer, it has been found as low as 55°, and in some cases brash ice has been reported in lower latitudes. But in these last instances, from the numerous icebergs adjacent, and from the very irregular sizes and forms of the ice, I am inclined to believe that it consisted of the debris of icebergs, and was not brash ice properly so called.†

In the northern hemisphere, icebergs do not appear to attain the dimen-

* In the northern hemisphere they have their principal birthplace on the coast of Spitzbergen and the eastern shores of Greenland. The Altai mountain range gives rise to glaciers similar to those of Switzerland. But the cold of Siberia is not sufficiently intense to allow these glaciers to become icebergs. There they are gradually dissolved by the summer's sun, and feed with their waters the rivers Kutania and Lena. Still, however, immense blocks of ice are brought down from the glaciers to the coast by these rivers; although they cannot be denominated icebergs, they possess a common origin. In 1799 a Tungusian discovered in one of them the body of a Mammoth, an extinct species of mammal, the fossil remains of which are found in the deposits of the Pliocene period of Lyell. Now since it is a law that the progress of glaciers is slow in proportion to the low temperature of the climate, we cannot imagine that icebergs of the south owe their origin to a more recent period than block ice on the Siberian rivers; consequently we may regard them as possessing a preadamite existence.

† The only report of an ice field in the Southern Hemisphere that I have received was that of one that was seen in the month of September, 1854, in lat. 58° S., long. 56° W.

sions of those of the southern regions. Three hundred feet high is the greatest elevation reported in which we can place reliance. In the southern hemisphere icebergs are reported of heights surpassing the limits of credibility. There are others reported by gentlemen on whose observations we can place implicit dependence, of heights far surpassing those of the northern seas.*

The one already alluded to as sighted by the "Lightning" on the 10th of September, 1856, in lat. 55° 33′ S., long. 140° W., was 420 feet high; and one of our most celebrated and talented naval surveyors informed me that he had seen icebergs in southern regions 800 feet high. The "Generaal Baron von Geen," August 6th, 1840, passed an iceberg 1000 feet high. The "Agneta," on the 23rd of March, 1855, passed an iceberg 960 feet high, in lat. 53° 14′ S., long. 14° 41′ E.

In horizontal dimensions, however, the icebergs of the south exceed those of the north to a greater extent than in elevation. It is only in the southern ocean that the existence of icebergs of miles in circumference is recorded. In September, 1840, an iceberg was seen in lat. 41° S., long. 14° E., a mile in circumference. In January, 1858, in lat. 53° 30′ S., long. 51° W., an iceberg three miles long was observed. But these appear insignificant when compared with a body of ice reported to have been passed by twenty-one ships during the five months of December, 1854, and January, February, March and April, 1855, floating from lat. 44° S., long. 28° W., to lat. 40° S., long. 20° W. This mass has received the various denominations of an immense iceberg, an ice-island, "groote ijseiland," and a connected mass of icebergs. Its elevation in no case exceeded 300 feet; but its horizontal dimensions were sixty miles by forty. It was of the form of a hook, the longer shank of which was sixty miles, the shorter forty miles, and embayed between these mountains of ice was a space of water forty miles across. The first account of it was received from the "Great Britain," which, in December, 1854, was reported to have steamed fifty miles along the outer side of the longer shank. This longest range of ice then bore N.E. and S.W., the bay before alluded to, being open to the N.E. Whilst in this position it exposed ships to but little danger, since the bay could only be entered on the

* Dr. Darwen in 1796 noticed the extraordinary size of the icebergs of the southern ocean.

opposite course to that of ships on their homeward passage from Australia. But during the next three months it swung round 90° to the left, and drifted E.N.E. about 100 miles, which brought it very near to the route of outward bound ships, with the bay open to their track. We can scarcely imagine any mass of ice in an equally dangerous form, and I regret to add that one emigrant ship, the "Guiding Star," was embayed and lost on it with all hands. The "Cambridge" and "Salem" were also embayed in March and April, 1855, but through the skill of their commanders they were extricated from the most perilous situation in which we can conceive a ship to be placed by ice in any form. In 1856 I had the opportunity of taking the opinion of the late Dr. Scoresby on the nature of this mass, laying before him the numerous reports I had received concerning it. He believed that it consisted of an immense number of icebergs, that had been drawn together, by some of them having grounded in the track of others, and became afterwards united by the frost of successive centuries; till at length, by some convulsion or otherwise, the whole mass was set adrift. Dr. Scoresby was a very high authority on this subject, and I place great confidence in his opinion. Beyond doubt this was an extraordinary phenomenon, there being no record of any other mass of ice bearing even approximate horizontal proportions to those now described.

In tracing this and other remarkable masses of ice, I have been able to determine the direction of their drift, and their rate of progress. With the exception of one locality, the course of an iceberg is E. by N., rate ten miles per diem. The only exception is, after it has passed to the eastward of the Horn, when its course bends to the N.E., veering round to the east as it approaches the lat. of 40° S., on which parallel from the meridian of 25° W. to 15° W. its progress is scarcely one mile daily, in direction nearly east. This course is afterwards bent towards the south, crossing the meridian of Greenwich on the S.E. rhumb. I have been unable to determine whether it again changes its course to E. by N. or returns by a vortical current to the neighbourhood of the Horn. There are facts tending to support both of these hypotheses; but since near the meridian of Greenwich few ships go higher than lat. 50° S. we have not a sufficient number of observations to enable me to decide this question.

If, however, an iceberg happens to be carried to the left of the shaded line on the chart, situated between 50° S. 50° W. and 41° S. 30° W. it

continues its south-east course after it passes the fortieth parallel, and is carried towards the Cape of Good Hope. Thus in January, 1850, an iceberg was within sight of the Cape. In April, 1828, and in August, September and October, 1840, there were several icebergs in this locality.

From the consideration of these facts we draw the following practical conclusions :—

First. That the period comprising the months of November and December, 1854, and January, February, March and April, 1855, was a most extraordinary season for icebergs.* In every part of the southern hemisphere south of the fortieth parallel, the number of icebergs met with during these six months was beyond all recorded precedent. We had during that period a far greater number reported than the total of every other season from the time of Captain Cook down to the present year.† Whether such phenomena are periodical, or that of 1854-55 is an exceptional one, we cannot decide; but from the reports of those who have been engaged in the seal trade, we believe that for fifty years previously there had been no season bearing the least comparison with the one under consideration. It has been observed that meteorological cycles exist in the southern hemisphere. If there exists a cycle in which such seasons return, the period must be secular. One individual cannot therefore determine this point. Under this impression I beg to record the result of my investigations in the Transactions of this Society; it being one of the advantages of Scientific Societies that they can undertake to carry on investigations which require a period for their completion beyond that of the life of any individual.

Secondly. On the outward passage, from the meridian of the Cape of Good Hope to Australia, there is no parallel that possesses an immunity from icebergs. In one year the greatest number is met with on one parallel; in another year on a different one. We cannot regard it as a general rule in this region, that the average number is greater in the

* On the accompanying chart and catalogue we have distinguished the ice of this period by figures, the ice of other periods by letters.

† Since reading this paper I have received accounts of the ice sighted in the months of January, February and March, 1858. Although this season bears no comparison with that of 1855, the number of icebergs already reported greatly exceeds the average. In printing this paper it has been thought proper to extend it so as to include all reports received up to the time of going to press.

higher than in the lower latitudes, till we attain the parallel of 52° S., above which the danger is considerably increased. In seasons when icebergs are numerous, no outward bound ship has adopted a maximum latitude higher than 52° S. without meeting with a greater number than that sighted by those who have sailed on the lower parallels. We therefore recommend on this ground as well as others previously discussed that 51° S. should be the maximum latitude in voyages to Australia. The parallel of 53° S. is also dangerous on account of the islands and rocks which were discovered by Captain M'Donald of the "Oriental," in November, 1853, and known by the name of M'Donald's Islands;* the westernmost being situated about 52° 50′ S., and 73° 50′ E.; the easternmost 53° 20′ S. and 74° 20′ E.

Thirdly. That on the homeward passage to the meridian of 80° W., a greater number of icebergs are met with in the lower than in the higher latitudes. Thus, in November, 1854, the "Great Britain" passed two hundred and eighty icebergs in latitude 56° S., between the meridians of 112° W. and 92° W., independently of numerous icebergs in other localities. On the other hand, the "Golden Era" passed these meridians at the extraordinary latitude of 63° S., without meeting with an iceberg. It was not until she arrived at 72° W. that any inconvenience was experienced from ice, when she was surrounded by pack ice, in which she narrowly escaped being wrecked. The isothermal line of latitude 51° S. and longitude 40° E.† appears to pass through latitude 61° S. in longitude 140° W., consequently a much higher maximum latitude may be adopted for the homeward passage. But, from June to December inclusive, the parallel of 57° S. should be preferred, since in most cases those who have adopted the higher parallel have been either impeded or endangered by pack ice.

Fourthly. That by far the greatest number of icebergs is met with in

* About three years subsequently to the discovery of these islands and rocks they were reported as being discovered by the Captain of a ship engaged in the seal trade, belonging to the United States of America, although they had previously been reported by the Captains of several English ships, and were at the time laid down in the Admiralty Charts.

† This hypothesis must only be regarded as being founded on the very limited number of observations that have been brought under my notice. We must await the returns of the Meteorological Department of the Board of Trade for several years before we can regard this important fact as established or otherwise.

the Southern Hemisphere during the six months of November, December, January, February, March and April. I have not the record of a single iceberg having been sighted in the midwinter months of June and July, and they have been seldom reported in the months of May and August.

Fifthly. Eastward of the Horn there is a space bordering on both the outward and homeward track, which may be regarded as dangerous from ice. In the accompanying chart this region is distinguished by being surrounded by shaded lines and in the subjoined catalogue all ice that has been reported within its limits is distinguished by an asterisk.(*) From November, 1854, to April, 1855, this part of the Southern Ocean was so crowded with ice that no ship entered it without incurring serious risk; and generally we have more reports of ice in this area than in any other region of the Southern Hemisphere, although, in consequence of a caution extensively circulated, most Australian ships avoid entering this locality. It was here that the "Golden Era" was entangled in September, 1854; in August of the same year the "Red Jacket" lost four days amongst the ice in this region; in the same locality the "Champion of the Seas" spoiled her homeward passage in March, 1855; in the same month the "Guiding Star" was lost with all hands, on her outward passage, and we have before observed that it was amongst the same ice that the "Cambridge" and "Salem" incurred very serious risk. Under these circumstances, I have hesitated whether it might not have been desirable to modify the outward composite track now generally adopted, by delaying to cross the fortieth parallel till the longitude of 10° E. is attained. If it were not from the belief that the season 1854–1855 was an exceptional one, I should have certainly exerted my influence thus to have altered the outward composite route, although by so doing less favourable currents would be obtained, and there would be a greater risk of encountering unfavourable winds. Since April, 1855, however, the only report of icebergs sighted in this part of the outward composite route which would have been avoided if this suggested modification had been adopted, was in May, 1855, latitude 49° S., longitude between 6° E. and 12° E., and also in March, 1856, in latitude 46° 50′ S. and longitude 3° 11′ E. We therefore do not, at present, feel ourselves called on to press this alteration.*

As far however as the homeward passage is affected by the consideration

* See also in remarks on Catalogue and Chart.

of this locality, it tends only to confirm our previous convictions, and we have more abundant reasons than ever to impress on the mariner the propriety of sighting the Horn and the Falkland Islands on his homeward passage. He has every inducement to follow this track. It is favorable for making a short passage, and it will keep the ship clear from the only locality, adjacent either to the passage out or home, in which real danger exists on account of the ice. I think great sacrifices should be made to follow this part of the route home rigidly, for I have not met with any very extraordinary voyage home made by a ship that has given to the Horn or the Falkland Islands a wide berth. In all cases in which no danger has been experienced from ice, delays have been occasioned and the passage has been spoiled, nor have I a case on record in which any mariner, following this advice, has met with ice after arriving east of the meridian of 75° W.

And lastly. In all ships adopting the composite route to or from Australia, a good look out should be kept, and the changes of the thermometer should be carefully observed. Captain M'Donald of the "James Baines" met with a considerable number of icebergs in his late extraordinary passages, but he observes that these stray icebergs do not considerably increase the risk with a prudent and careful captain. He has only to notice his thermometer to be forewarned of the approaching danger. In one case he found that the thermometer fell 4° as he approached the ice, and 2° more as he got to leeward of the berg. Captain Newland, in the log of the "Champion of the Seas," proves also that the thermometer not only indicates the approach towards ice, but also the amount of ice we may expect to meet with. In latitude 58° 30' S. he passed two icebergs, the temperature of the water being 44° and that of the air 42°. Between 50° S. and 47° S. he passed thirty-nine icebergs, the thermometer then fell to 35° in water and 36° in air. In this instance the temperature was 8° or 9° lower, although the ship had sailed about 10° nearer to the equator, at which point the mean temperature is 10° higher. In one case however, it is reported that the temperature of neither the air nor water was sensibly affected when an iceberg was approached. It is probable that in this instance some meteorological change might have counterbalanced the effect of the proximity of ice. But, if otherwise, this single exception cannot prove that the thermometer may be neglected, but rather enforces the necessity of keeping a most careful look out at all times.

REMARKS ON THE CATALOGUE AND CHART.

In the following catalogue the ice is arranged according to the month in which it was observed, so as to show at a glance, when examining the chart, the comparative amount in any month. That which has been met with in the region we have designated as "dangerous from ice" in the chart, is indicated in the catalogue by an asterisk.(*) In both the catalogue and the chart we can readily distinguish the ice impediments which were encountered during the extraordinary six months in the years 1854–1855 by their indices being numbers and all other indices being letters. The capital letters represent the situation of ice seen at other seasons in passing to and from Australia, and the small letters ice sighted on voyages to other places.*

In obtaining the data of which the catalogue is a record, I have examined about two hundred and fifty† logs of Australian ships. Of these one hundred. and four contain reports of ice. Besides which I have received forty-one separate records of ice observed in the Austral seas derived from other sources. In very many cases the same ice has been reported as seen from several ships, and as having been met with during the same month. In such cases only one entry is made and the latitude and longitude given is the mean of those given in the several reports. But if seen in more than one month from different ships, one report for each month is given although there exists no doubt of its being the same ice. The reports of "the connected icebergs" form the most remarkable example of this. They are twenty-one in number, extending through five consecutive months commencing with December, 1854. Its position for the mean of each month is given in the catalogue and its position is indicated on the chart between the indices eight and nine. It will be observed that in the immediate vicinity of the Composite route to Australia, as laid down on the chart, between the meridians of 20 W. and 46 E., numerous reports of

* The numerous icebergs extending from 62 S. and 80 W. to 53 S. and 82° W. were met with by ships going to the west coast of America, but having been observed during the month of December, 1854, we have marked them with the index 3, the same as that which represents ice seen on passages to and from Australia during the same month.

† I had commenced the practice of examining ships' logs for ice a considerable time before it had occurred to me that it was desirable to note cases in which the voyage had been made to and from Australia without meeting with ice. But since December, 1856, I have recorded one hundred and eighteen such cases.

ice are recorded. The comparison of this region with other parts of the area designated as "dangerous from ice" might lead to a wrong conclusion, unless we take into consideration the fact that nearly two hundred of the ships before referred to have passed within a hundred miles of this route, and that more than three-fourths of these met with no ice there, whereas on the homeward voyage only eleven ships from which I have received reports had entered this region, and each of these had encountered ice.

It is a very remarkable fact that amongst the numerous reports I have received from Australia going ships, not one was within the region in which ice is met with during the month of October, 1854. This is much to be regretted, since this was the month that preceded the extraordinary season of 1854–1855, and in the previous month numerous icebergs were met with. I should be particularly obliged to any captain who was navigating these seas in October, 1854, if he would communicate to me whether he met with any ice, or otherwise.

Index to Chart.	Date.	Latitude. ° ′	Longitude. ° ′	Description.
a	August, 1840.	38 30 S.	1 0 E.	Four icebergs.
a		36 10 S.	13 40 E.	Two icebergs.
a		37 30 S.	14 40 E.	An iceberg reported 1000 ft. high.
A	August, 1854.	*50 0 S.	41 0 W.	Several icebergs.
A		*53 0 S.	47 0 W.	Icebergs.
A		*55 0 S.	51 0 W.	Pack ice.
A		*56 30 S.	60 0 W.	Pack ice.
b	September, 1840.	37 30 S.	10 0 E.	An iceberg.
b		37 0 S.	13 0 E.	An iceberg.
b		37 0 S.	15 0 E.	An iceberg.
b		37 0 S.	15 0 E.	An iceberg 1000 feet long and 400 feet high, probably the same as the last named, observed from a different point.
b		41 30 S.	14 10 E.	An iceberg one mile in circumference.
b		37 45 S.	14 50 E.	An iceberg.
b		40 30 S.	19 0 E.	Two icebergs.
b		40 20 S.	26 0 E.	An iceberg.
b		37 30 S. to 38 47 S.	36 19 E.	Icebergs.
B	September, 1844.	38 0 S. to 39 15 S.	24 0 E. to 27 0 E.	Numerous icebergs.

Index to Chart.	Date.	Latitude. ° ′	Longitude. ° ′	Description.
B	September, 1844.	59 0 S.	140 0 W. to 150 0 W.	Numerous icebergs.
C	September, 1854.	63 0 S. to *58 0 S.	69 0 W. to 72 0 W.	Pack ice.
C		*58 0 S.	56 0 W.	An ice field.
C		*44 40 S.	15 20 W.	Icebergs.
C		*47 30 S.	10 40 W.	Icebergs.
C		*49 40 S.	1 40 W. to 0 20 E.	Numerous icebergs.
c		48 0 S.	45 0 E.	An iceberg.
D	September, 1856.	55 33 S.	140 0 W.	An iceberg 420 feet high.
e	September, 1857.	*59 0 S.	61 20 W.	Pack ice.
f	October, 1840.	38 0 S. to 37 0 S.	12 0 E. to 14 0 E.	Five icebergs.
g	October, 1853.	53 0 S.	19 0 E.	An iceberg.
g		55 20 S.	23 10 E.	An iceberg.
h	October, 1855.	*48 0 S.	21 0 W.	A very large iceberg.
E	November, 1839.	44 0 S. to 45 0 S.	87 30 E. to 100 0 E.	Numerous icebergs 400 feet high.
i	November, 1840.	39 50 S.	33 40 E.	An iceberg.
F	November, 1853.	*47 40 S.	10 0 W.	An iceberg.
F		*40 45 S.	4 0 W.	An iceberg.
F		52 26 S.	19 42 E.	An iceberg 1500 feet long.
F		52 20 S.	27 47 E.	Three icebergs.
F		51 3 S. to 51 20 S.	32 21 E. to 37 6 E.	Numerous icebergs.
F		53 51 S.	86 40 E.	An iceberg.
2	November, 1854.	56 0 S.	112 0 W. to 92 0 W.	Two hundred and eighty icebergs.
2		*61 0 S. to *58 0 S.	65 0 W. to 61 0 W.	Numerous icebergs.
2		*58 0 S.	59 0 W.	Icebergs.
2		*56 30 S.	56 0 W.	Icebergs.
2		*44 20 S.	22 0 W.	Icebergs.
2		50 0 S.	30 0 E.	An iceberg.
2		52 0 S. to 53 0 S.	25 0 E. to 45 0 E.	Thirty-three icebergs.

Index to Chart.	Date.	Latitude. ° ′	Longitude. ° ′	Description.
2	November, 1854.	51 0 S. to 52 0 S.	41 0 E. to 45 0 E.	Numerous icebergs.
2		53 0 S.	88 0 E. to 102 0 E.	Fifty-seven icebergs.
G	November, 1855.	*48 0 S.	18 0 W.	A very large iceberg.
j	December, 1772.	49 46 S. to 54 55 S.	19 58 E. to 21 44 E.	Numerous icebergs.
k	December, 1789.	44 30 S.	44 30 E.	An iceberg.
l	December, 1830.	*57 0 S.	23 0 W.	Icebergs.
l		*56 30 S.	13 0 W.	Icebergs.
l		55 30 S.	13 0 W.	Icebergs.
l		*58 0 S. to *57 0 S.	9 0 W. to 10 0 W.	Numerous icebergs.
m	December, 1849.	39 24 S.	39 0 E.	An iceberg.
H	December, 1853.	48 30 S.	35 20 E.	An iceberg.
H		53 0 S.	95 20 E.	An iceberg.
3	December, 1854.	*62 0 S. to 53 0 S.	80 0 W. to 82 0 W.	Numerous icebergs.
3		*55 0 S. to *56 0 S.	49 0 W. to 47 0 W.	Numerous icebergs.
3		*50 0 S. to *47 0 S.	30 0 W. to 47 0 W.	Numerous icebergs.
3		*44 0 S. to *43 0 S.	28 0 W.	An immense connected mass of icebergs, greatest dimensions 60 miles, see page 242.
3		*50 0 S. to *53 0 S.	3 0 E. to 22 0 E.	Numerous icebergs.
3		*52 12 S.	15 24 E.	Eight icebergs.
3		*50 30 S.	19 30 E.	Icebergs.
3		*53 0 S. to *54 0 S.	23 0 E. to 25 0 E.	Forty icebergs.
3		49 0 S.	22 24 E.	An iceberg.
3		47 30 S.	23 30 E.	Icebergs.
3		49 40 S.	34 30 E.	Icebergs.
3		49 0 S.	36 0 E.	Icebergs.
3		48 0 S.	41 0 E.	Two icebergs.
3		44 0 S. to 45 0 S.	46 0 E. to 51 0 E.	Numerous icebergs.

Index to Chart.	Date.	Latitude. ° ′	Longitude. ° ′	Description.
3	December, 1854.	53 0 S.	85 0 E. to 99 0 E.	Numerous icebergs.
3		52 30 S.	84 0 E. to 102 0 E.	Numerous icebergs.
n	January, 1773.	51 0 S.	59 0 E.	Icebergs.
o	January, 1850.	34 0 S.	20 20 E.	An iceberg seen from the Cape.
	January, 1855.	*42 0 S.	22 0 W.	Connected icebergs same as 8 and 9.
4		*41 0 S.	17 0 W.	An iceberg.
4		*42 0 S.	16 0 W.	An iceberg.
4		*42 0 S.	14 0 W.	Icebergs.
4		*45 45 S.	21 0 E.	Icebergs.
4		47 0 S.	37 46 E.	Icebergs.
4		50 0 S.	41 0 E.	Icebergs.
4		47 20 S.	41 10 E.	Numerous icebergs.
I	January, 1856.	*49 10 S.	14 0 E.	Icebergs.
I		45 30 S.	45 30 E.	Numerous icebergs.
I		50 20 S.	113 0 E.	Fifty-five icebergs.
J	January, 1858.	*53 30 S.	51 0 W.	Numerous icebergs, one three miles long.
J		*51 30 S.	47 49 W.	Numerous icebergs.
J		*53 0 S.	48 0 W.	Numerous icebergs.
J		*51 24 S.	44 53 W.	Icebergs.
p	February, 1774.	*54 0 S.	21 0 W.	Several icebergs.
p		*54 20 S.	15 30 W.	Three icebergs.
p		*53 30 S.	8 0 W.	Two icebergs.
p		*52 30 S.	4 0 W.	Three icebergs.
p		*53 54 S.	0 30 W.	Three icebergs.
p		*53 30 S.	6 35 E.	Three icebergs.
q	February, 1755.	*58 0 S.	6 3 W.	Three icebergs.
q		*57 20 S.	4 0 E.	An iceberg.
q		*54 26 S.	24 21 E.	Numerous icebergs.
q		52 50 S.	26 30 E.	Two icebergs.
5	February, 1855.	*51 0 S.	47 0 W.	Numerous icebergs.
		*41 30 S.	21 40 W.	Connected icebergs same as 8 and 9.
5		*41 30 S.	18 30 W.	Icebergs.
5		50 0 S.	107 0 E.	An iceberg.
5		46 0 S.	134 0 E.	Icebergs.
K	February, 1858.	*51 0 S.	47 0 W.	Numerous icebergs.
r	March, 1774.	*53 17 S.	11 50 E.	Icebergs.

Index to Chart.	Date.	Latitude. ° ′	Longitude. ° ′	Description.
r	March, 1774.	*48 30 S.	14 30 E.	Two icebergs.
	March, 1839.	66 0 S. to 67 0 S.	98 0 E. to 102 0 E.	Numerous icebergs south of the limits of the chart.
6	March, 1855.	59 0 S. to 58 0 S.	132 0 W. to 128 0 W.	Numerous icebergs.
6		58 0 S.	118 0 W. to 136 0 W.	Numerous icebergs.
6		*62 0 S. to *58 0 S.	60 0 W. to 67 50 W.	Numerous icebergs.
6		*58 30 S.	63 10 W. to 65 0 W.	Numerous icebergs.
6		*52 30 S.	40 30 W.	Numerous icebergs.
6		*52 0 S. to *44 0 S.	39 0 W. to 32 0 W.	Thirty-nine icebergs.
6		*40 0 S. to *41 0 S.	21 30 W. to 23 30 W.	Connected icebergs same as 8 and 9
6		*42 20 S.	14 40 W.	Icebergs.
6		*50 0 S. to *52 0 S.	7 0 W. to 0 0	Numerous icebergs.
6		*53 14 S.	14 41 E.	An iceberg 960 feet high.
6		*52 0 S. to *53 20 S.	0 0 to 23 0 E.	Numerous icebergs.
L	March, 1856.	*46 50 S.	3 11 E.	Icebergs.
L		46 0 S.	37 30 E.	Icebergs.
M	March, 1858.	*51 0 S.	50 0 W.	Icebergs.
M		*50 10 S.	47 21 W.	Seventeen large icebergs.
s	April, 1828.	35 50 S.	18 5 E.	An iceberg.
s		37 31 S.	18 17 E.	A very large iceberg.
N	April, 1853.	51 0 S.	131 0 W.	A large iceberg.
N		53 0 S.	120 0 W.	Six icebergs.
N		36 0 S.	20 0 E.	Numerous icebergs.
P	April, 1854.	53 0 S.	80 0 E.	Two icebergs.
7	April, 1855.	57 0 S.	101 0 W.	Numerous icebergs.
7		58 0 S.	88 0 W.	Numerous icebergs.
7		57 0 S.	88 0 W. to 79 0 W.	Numerous icebergs.
7		*48 20 S.	48 40 W.	Several icebergs.

Index to Chart.	Date.	Latitude. ° ′	Longitude. ° ′	Description.
7	April, 1855.	*51 0 S. to *55 0 S.	44 0 W. to 40 0 W.	Drift ice, probably the debris of icebergs.
7		*53 0 S.	41 0 W.	Numerous icebergs.
7		*52 0 S.	41 0 W.	Icebergs.
7		*51 0 S.	40 0 W. to 39 0 W.	Numerous icebergs.
9		*40 0 S. to *41 0 S.	20 0 W. to 22 0 W.	Connected icebergs, greatest length 60 miles, the same as 8.
7		*47 46 S.	7 47 W.	Three great icebergs.
7		*43 0 S.	5 0 W.	Numerous icebergs.
7		*48 30 S. to *49 0 S.	6 0 E. to 12 0 E.	Numerous icebergs.
7		43 30 S.	13 0 E.	Numerous icebergs.
7		46 0 S.	27 0 E.	Numerous icebergs.
R	April, 1856.	46 0 S.	39 30 E.	An iceberg.
R		47 0 S.	53 0 E.	Several icebergs.
R		47 20 S.	58 0 E.	An iceberg.
t	May, 1839.	39 30 S.	16 41 E.	An iceberg.
S	May, 1855.	49 0 S.	11 0 E. to 31 0 E.	Very numerous icebergs.
S		45 0 S.	37 40 E.	A very large iceberg.
S		48 0 S.	38 0 E.	An iceberg.
T	June, 1853.	60 0 S. to 57 0	141 0 W.	Pack ice.
V	June, 1857.	61 41 S.	47 49 W. to 44 0 W.	Pack ice.

ON THE MICROSCOPE AS APPLIED TO NATURAL HISTORY.

By Thomas Sansom, A.L.S., F.B.S.E.

(Read 18th February, 1858.)

In bringing this subject before the Historic Society, I do not propose to entertain the members with details of discoveries of my own, but rather to point out some of the more important applications of the Microscope to the investigation of minute structures in the animal and vegetable kingdoms. The microscope has now become to the naturalist a necessary instrument. To the amateur it will ever be a favourite recreation, and no school should be without one. A few hours' demonstration of subjects under the microscope will generally convey more information to a student in natural history than can be gained by weeks of reading. Many of the members present are no doubt aware that the compound microscope, as at present used, is a comparatively modern instrument, and it is impossible to tell to what extent researches into the higher branches of natural history would have been carried by Leeuwenhoek, Harvey and others, had they possessed such instruments as those now manufactured. It is not, however, the possession of a fine instrument that will make a naturalist; but when a perfect instrument is placed in the hands of a man possessed of good observing faculties we may hope for great results. Practical naturalists have frequently had to overcome difficulties which to an ordinary observer would have been insurmountable. Such was the case with Leeuwenhoek; he not only manufactured the microscopes he used, but cast and ground his lenses. Our distinguished countryman, the late George Newport, I am informed, made all his early investigations into the anatomy of insects with the eye-piece of a telescope, which he bought at Chertsey for half-a-crown. In the present day naturalists have very few difficulties to contend with, for a better instrument may now be purchased for from three to five guineas than could be procured for thirty pounds twenty years ago; and I think it may safely be affirmed that no optical instruments are more perfect than our best modern microscopes. The degree of perfection which has been attained during the past quarter of a century

by our London opticians, is marvellous. And to the communication of the discoveries of Mr. Joseph Jackson Lister, in 1829, we are mainly indebted for these advances.

Towards the latter end of the seventeenth century, the microscope, although very rude in form, excited intense curiosity amongst scientific men. Several books were published detailing the results of their investigations. The *Micrographia* of Robert Hooke, published in 1667, was in its day a wonderful production. The early volumes of the Philosophical Transactions of the Royal Society abound with papers on microscopical subjects, chiefly contributed by Grew, Malpighi and Leeuwenhoek.

In 1703 the *Hydra* was first discovered by Leeuwenhoek, and in 1741 M. Trembley of Geneva, in a paper published by the Royal Society, described the peculiarities of this remarkable animal. Some of the experiments detailed in this communication are so graphically recorded, and have been subsequently so well and so repeatedly verified, that I cannot refrain from quoting them as given by Baker.* M. Trembley, after explaining the drawing of a *Hydra* with eleven horns or arms, states, "the "horns serve for legs and arms, and at the end whence they come out, is a "mouth or passage into the stomach, which, extending the whole length, "forms a body like a pipe or gut, open at both ends. There are two species. "Some stretch their bodies to an inch and a half in length, but that is rare; "few even of the larger kind being above nine or ten lines long; and such "can contract themselves to not above a single line, stopping if they please "at any degree between the utmost contraction and the utmost extension. "Their horns differ in length according to the species; one sort can extend "them seven inches. Their number of horns is also different, but a full-"grown *Hydra* has seldom less than six. Their common posture is to "fasten their tails to something, and then extend the body and arms into "the water; and they make use of their progressive motion to place them-"selves conveniently for this purpose. Their arms are so many snares "stretched out to catch small creatures in the water; and when any insect "happens to touch an arm, it is caught and conveyed to the mouth by the "contracting of the arm, or if the creature struggles the other arms assist. "They are voracious animals. A *Hydra* can swallow a worm whole twice "or thrice its own length. If the worm comes endways it is swallowed in "that manner, otherwise it goes down double, and makes several foldings in "the stomach, which distends wonderfully for its reception. The worm soon "dies there, and after it has been squeezed or sucked is voided by the mouth. "The *Hydra* brings forth its young from the exterior parts of the body, and

* The Microscope made easy, &c., page 98. By Henry Baker, F.R.S. 3rd Edition. London, 1744.

" that not always a single one at once; it is common to see five or six, nay, " sometimes nine or ten at the same time; and when one drops off another " comes in its place."

The most singular part of M. Trembley's account is what he states concerning his operations on these creatures. " If one of them be cut in two, " transversely, the forepart which contains the head, mouth and arms, " lengthens itself, creeps and eats on the same day. The tail part forms a " head and mouth at the wounded end, and shoots forth arms, more or less " speedily as the heat is favorable. In summer they will be shot out in " twenty-four hours, and the new head is perfected in a few days."

Cut a *Hydra* where, or into what parts you please, transversely, each part becomes a complete *Hydra*. But being too small an animal to admit of being divided into many parts at once, M. Trembley first cut one into four quarters, and let them grow; then divided each quarter, and proceeded subdividing till he obtained fifty-one out of one. He tried numerous experiments of this sort, but the most extraordinary was the following. Cutting a *Hydra* through the head and body, but not quite through the tail, in a short time there were two perfect heads and bodies with but one tail; these were in like manner divided, until a *Hydra* with seven heads and bodies conjoined to one tail was produced. These seven heads were cut off at once; seven others grew in their stead, and each of the seven heads so cut off, putting forth a new body, became a perfect *Hydra*. It was stated that the body of the *Hydra* is a sort of a hollow gut or tube; this may be turned inside out as you would turn a stocking, notwithstanding which the animal eats grows, and multiplies, as if nothing had been done to it.

From the middle of the last century down to within about thirty years ago, very little had been done towards improving the microscope, and little use appears to have been made of the instrument, especially in this country. You are all no doubt aware that the study of natural history was confined almost exclusively to the medical profession and professional naturalists; our books were all written in Latin, and consequently were sealed books to the majority of the population; but with the present century a new era dawned, and many valuable works have been written in our own language: accordingly, natural history in its several branches has gradually progressed, until it has become a favorite study, and forms one of the branches of liberal education. To this increased interest in natural history may be traced the improvements in the

microscope, for as science advanced, and structural differences became more important in affording distinctive characters, the want of good instruments became more apparent. The foreign opticians were the first to endeavour to meet this demand, and to this fact, no doubt, is to be attributed the notion that the foreign microscopical glasses are superior to the English. To say so at the present day may be called a vulgar error, for no one having the slightest knowledge of the subject will admit that such is the case. The best foreign object glasses of the present time are scarcely equal to second-rate glasses of British manufacture.

In proof of this I may state, that shortly before the opening of the Great Exhibition in 1851, M. Nobert, of Griefwald, in Prussia, manufactured certain test objects for microscopic glasses, which as specimens of delicate manipulation are surprising productions. These tests consist of small plates of glass, ruled with parallel lines in bands of different distances, each band consisting of a series of from about a dozen to thirty lines.

The specimen which I exhibit this evening is the first that was sent to this country by M. Nobert. He sent it as a challenge, stating that none of the German microscopists could count the finest lines, and he, like most of his countrymen, thought he was safe in defying the English microscopists. This slide was sent to Mr., now Dr., Bowerbank, of Highbury, who not only counted the lines in each series, but also measured their distances apart. The finest lines in the slide he found were 46,000 to an inch. M. Nobert was now put on his mettle, and he ruled a still finer slide, taking care to compute the distance apart of each series of lines. In the second slide, the finest lines were 62,000 to the inch. Since that time many much finer slides have been ruled, and in every instance they have been read and measured with London glasses. On one slide, in the possession of Mr. Warren De La Rue, there are 322 lines arranged in thirteen bands, each band being composed of a series of from seventeen to thirty-nine lines, and the distances apart of each series of lines varies from $\frac{1}{46046}$ to $\frac{1}{119612}$ of an inch.*

Perhaps the most important discoveries lately made in natural history are those of Suminski, with regard to the fecundation of ferns, and

* John Quekett. A Practical Treatise on the Microscope. Second Ed., p. 476.

of Thuret and Decaisne of the fructification of the algæ. These discoveries have been further carried out by Hofmeister and others.*

Until the publication of Suminski's observations, the Cryptogamia were considered unisexual, but I think there can now be no doubt that they have both male and female organs, though of a different character to those of the flowering plants. "The reproduction of ferns by their spores" (says Professor Henfrey) "exhibits some very remarkable phenomena. When the "spores are sown, they germinate after a time by a protrusion of the inner "coat of a delicate membranous pouch, which elongates and becomes divided "by septa into an articulated cellular filament; some of the cells emit slender "tubular filaments (which are not cut off by septa), apparently radical hairs, "and while these remain uncoloured, the larger cells from which they arise "acquire chlorophyll-granules. The young *prothallium*, as it is called, "increases in size by cell division, and at length acquires a somewhat heart-"shaped form, and soon some of the cells produce, upon the inner surface, "the structures called *antheridia*, which consist of stalked cellular bodies, "of simple but peculiar structure, in the interior of which are developed "minute cellules containing ciliated spiral filaments (spermatozoids), which, "on the bursting of the antheridial sac, escape not only from this, but from "their own parent cells, and swim about actively in the water by the aid of "their vibratile cilia.

"These antherids are often formed in large numbers, and the prothallium "goes on producing them as long as it exists; but at a period somewhat "later than the earlier antherids, there appear near the middle, at the front "of the under surface of the prothallium, other cellular bodies of more "complex structure, which are the *archegonia* or ovule-like bodies. The "archegone consists of a cellular papilla composed of a few colourless cells, "with a canal running down its centre (an intercellular passage) leading to "a cell *(embryo cell)* at the bottom, contained in a cavity *(embryo sac)* "in the substance of the prothallium. It is supposed that the ciliated "spiral filaments make their way down this canal, like the pollen tubes "through the micropyles of Phanerogamous ovules (Hofmeister states that "he has actually seen this), and then the embryo-cell becomes developed "into an embryo, which soon exhibits rudimentary leaves and rootlets, "bursts out from the cavity of the prothallium (which decays away) and "grows up into the ordinary leaf-bearing stem of the Ferns. The "prothallia bear a variable number of archegones, but not nearly so many "as of antherids, and they exhibit, in most fully developed specimens, "a number of effete organs of both kinds, which are readily distinguished "by the deep brown color assumed by the membranes lining their cavities."†

Much light has within the last few years been thrown upon the structure of plants by Schleiden, Mohl, Henfrey and others. To Mohl we are greatly

* Vide "Carpenter on the Microscope," pp. 367 and 401, for further information on this subject.

† Professor Henfrey in Micrographic Dictionary, page 261. Lond. 1856.

indebted for his valuable treatise on the anatomy and physiology of the vegetable cell.* His definition of the elementary organs of a plant is as follows:—"The primary form of the elementary organ of plants is that "of a completely closed, globular, or elongated vesicle, composed of a solid "membrane, and contains a fluid (*utricle*). If this remains still closed after "its development is completed, it is called a *cell*, but if a row of utricles "arranged in a line become combined, during the course of their develop- "ment, into a tube with an uninterrupted cavity, through the absorption of "their cross walls, a compound elementary organ is produced—the vessel."

Although Mohl reduces the structure of all plants to cells and vessels, it must not be supposed that these cells and vessels are alike; such is not the case, the forms and varieties of cells being innumerable. An extraordinary property possessed by some plants (perhaps by all) is the power of circulation or rotation of the protoplasm in the cells. The *Vallisneria spiralis*, *Tradescantia virginica*, *Anacharis alsinastrum*, *Characeæ*, *&c.*, afford striking examples of this property, and will amply repay the labor of investigation. This subject has been largely discussed in the late volumes of the Microscopical Journal, but still the subject is by no means exhausted. An interesting discovery was lately made by the Hon. and Rev. Sidney Godolphin Osborne in examining the *Closterium lunula*, one of the Desmideæ. At the end of each frond he observed a peculiar whirling or boiling motion, which upon closer examination is found to extend all round the edge of the frond. Mr. Osborne's papers appeared in volumes ii. and iii. of the Quarterly Journal of Microscopical Science, and will amply repay perusal.

In examining into the structure and growth of the vegetable cell many of the fresh-water algæ, from their great transparency and mode of growth, are peculiarly well adapted to show the various transformations. It is only by watching the same plant for days that any facts can be arrived at; but it should always be borne in mind that any one fact added to our stock of knowledge is so much gained to science; and it is from the record of simple observations (though trifling in themselves) that our great naturalists have been able to found their splendid theories and systems.

Another fruitful source of enquiry has lately been discovered. I allude to the Diatomaceæ. Very few of this tribe of plants were known a few years ago, but now we have many hundreds of named and well-established species.

* Principles of the Anatomy and Physiology of the Vegetable Cell, by Hugo Von Mohl. Translated by Arthur Henfrey, F.R.S., &c. London, 1852.

They are found in great abundance in every part of the kingdom. The Diatomaceæ are distinguished from their near allies, the Desmideæ, and other uncellular algæ, by having an epidermal covering of silex or flint. This renders their forms indestructible by the ordinary agents of decomposition. They are all microscopic, and form the most beautiful and delicate objects known. Some species inhabit the sea and some are found in fresh water, while others prefer a mixture of both. They are frequently found in a fossil state in all parts of the world, and near Leghorn there is a layer of fossil Diatomaceæ of considerable thickness, and extending over a space of many square miles. If this deposit is examined it will be found to consist of pure Diatomaceæ.*

Great difference of opinion prevailed about the nature of these organisms, Ehrenberg contending they were animal, while others considered them vegetable. This difference of opinion is not to be wondered at, for some of the species have a motion peculiarly their own. Many move about the field of the microscope with great facility. But the motion in *Bacillaria paradoxa* is so extraordinary, that I cannot refrain from calling your special attention to it, and in doing so quote the words of Mr. Thwaites.†

"When the filaments have been detached from the plants to which they "adhere, a remarkable motion is seen to commence in them. The first "indication of this consists in a slight movement of a terminal frustule, "which begins to slide lengthwise over its contiguous frustule; the second "acts simultaneously in a similar manner with regard to the third, and so "on throughout the whole filament, the same action having been going on "at the same time at both ends of the filament, but in opposite directions. "The central frustule thus appears to remain stationary, or nearly so; "while each of the others has removed with a rapidity increasing with its "distance from the centre, its own rate of movement having been increased "by the addition of that of the independent movement of each frustule "between it and the central one. This lateral elongation of the filament "continues until the point of contact between the contiguous frustules is "reduced to a very small portion of their length, when the filament is again "contracted by the frustules sliding back again as it were over each other; "and this changed direction of movement proceeding, the filament is again "drawn out until the frustules are again only slightly in contact. The "direction of the movement is then again reversed, and continues to "alternate in opposite directions, the time occupied in passing from the "elongation in one direction to the opposite being generally about forty-five

* The author of this paper will be happy to forward to any member of the Society interested in microscopical subjects, specimens of this deposit, in its natural state.

† Proceedings of Linnæan Society, vol. 1, p. 311.

"seconds. If a filament while in motion be forcibly divided, the uninjured "frustules of each portion continue to move as before, proving that the "filament is a compound structure, notwithstanding that its frustules move "in unison. When the filament is elongated to its utmost extent, it is "extremely rigid, and requires some comparatively considerable force to "bend it, the whole filament moving out of the way of any obstacle rather "than bending or separating at the joints. A higher temperature increases "the rapidity of the movement."

As the Diatomaceæ became better known, disputes arose amongst the naturalists as to the nature of the markings on their silicious shields. So late as 1841 the existence of transverse striæ on the shells of *Pleurosigma Hippocampus* was denied, and it was many months before the question was satisfactorily settled. As this tribe of plants became better known, it was found that the markings on the shells of the various species served as excellent tests for trying the resolving qualities of our object glasses. But it was also discovered that in distinguishing these markings much depended upon the angular aperture of the object glass, and I think to this single fact we are indebted in a great measure for the improvements made in objectives by our London opticians within the last ten years.

In order to elucidate the nature of the markings on these shells, great ingenuity has been shown in the construction of achromatic condensers. Many of the contrivances are most elaborate and very costly, but I think they may be dispensed with by any one who will take some little trouble to study the application of oblique light. If a shell of *Pleurosigma angulatum* be examined under a quarter inch object glass with direct light, no markings except the median line and nodule will be seen; if the same shell be examined with oblique light, it will be observed that the whole surface appears covered with fine lines; but if the illumination be applied on the opposite side of the microscope, the lines will appear to take an opposite direction, clearly indicating the existence of what appear to be two sets of lines. This is easily explained by a careful manipulation of the light, when the two sets of lines are resolved at the same time, and the shell appears chequered. If these apparent lines be carefully measured, they will average 52,000 to the inch.

There were great doubts as to the nature of these markings: it had been stated by Mr. Wenham that they were dots, and he even went so far as to affirm that in form they were hexagonal. But as it required very delicate manipulation and very fine glasses to prove this statement, it was received

with misgivings. However, Mr. Wenham set that question at rest by obtaining a photograph of the actual object, magnified with a power of about 1200 diameters; this he again enlarged to about 16,000 diameters, so that we now see each dot about one tenth of an inch in diameter; and I think that henceforth there can be no doubt as to the nature of these markings. One of these photographs, presented to me by Mr. Wenham, shows the hexagonal form distinctly. So great is the magnifying power, that only one third of the shell appears in the field of view: the entire shell, natural size, is under the hundredth of an inch in length; and if it had been possible to magnify the whole shell at one time, the photograph would have exceeded twenty-seven inches in length.*

In examining these very delicate objects it is sometimes necessary, and always desirable, to measure their size in order to arrive at correct estimates of the more nearly allied species. This is now done with comparatively little difficulty by means of Jackson's eye-piece micrometer. Having first ascertained the exact value of each line of the Micrometer with reference to the object glass in use, the process becomes very simple; and with that instrument an object can be measured, when a high power is used, to within the forty thousandth part of an inch; with Ramsden's cobweb micrometer the measurement may be estimated even nearer. The old microscopists were sorely troubled in their measurements by having to compare grains of sand, spores of Lycoperdon, small pieces of silver wire and various other substances, whose dimensions they had previously estimated, with the object under consideration, in order to arrive at an approximate measurement, which, as may be supposed, was often far from correct.

I have before stated, that in reviewing the Diatomaceæ, oblique light is required to bring out these peculiar markings; this is easily obtained by the aid of the bull's eye. If the microscope is placed at an angle of about 45°, more or less, according to the angular aperture of the object glass, and the lamp on a level with the under part of the stage, the light may be condensed by the aid of the bull's eye to any degree; or almost the same purpose is answered by placing the mirror on one side. When a very strong light is required an object glass makes an excellent achromatic condenser

* For a systematic arrangement of these organisms—*vide* "Synopsis of the British "Diatomaceæ," by the Rev. William Smith, with Plates by Tuffin West, 2 vols., 1853 and 1856.

Polarized light will be found a valuable auxiliary in the examination of many objects, and its use should never be neglected. Under ordinary light many of the harder tissues of plants, as for instance the vegetable ivory, nut-shells and others too numerous to mention, present a confused appearance, but immediately the polariscope is applied, the walls of the cells or other peculiar structures become visible and most distinct. I would, therefore, strongly recommend the use of polarised light in all cases of difficult definition, in order to see if any decomposition of the light takes place. To the crystallographer it is invaluable. Many crystals, quite indefinable when viewed with ordinary light, are intensely beautiful under the polariscope.

To the scientific naturalist the camera lucida will be found most useful. By this instrument we are enabled to obtain accurate delineations of the most difficult forms. To its use may be traced the great superiority of the drawings published in the present day over those of the last century, or even later. This apparent improvement is manifest not only in the execution of the plates, but in what is more important, namely: the correct proportion that one part of the structure bears to another.

Photographed by H J. Cauty

Mathie Macdonald & Macgregor lith. Liverpool.

HUMAN SKULL FROM WALLASEY POOL.

NOTICE OF MAMMALIAN REMAINS DISCOVERED IN THE EXCAVATIONS AT WALLASEY FOR THE BIRKENHEAD NEW DOCKS.

By Mr. Thomas J. Moore, Keeper of the Derby Museum, Liverpool.

(Read February 18th, 1858.)

In the course of the excavations now in progress at Wallasey Pool, for the Birkenhead New Docks, several Horns, Skulls, and Bones have from time to time been found imbedded at a considerable depth below the late bed of the Pool. The greater portion of these have been handed over by Messrs. Thompson, the contractors, to the Birkenhead Dock Committee for presentation to the Free Public Museum; and by the kind permission of the Library and Museum Committee I am enabled to exhibit them before the Society this evening. The specimens consist of the following—

A Human Skull and Thigh Bone.

Several Horns and portions of Skulls, (in one instance nearly perfect,) of the Great Fossil Ox, *Bos primigenius.*

A Skull of the Small Fossil Ox, *Bos longifrons,* in a nearly perfect condition.

Four imperfect Horns of the Fossil Stag, supposed to be identical with the Red Deer, *Cervus elaphus.*

The Rib of a large Cetacean.

Some pelvic bones, two vertebræ, and a few bones of the extremities, of the Genera Bos and Cervus.

The Human Skull and a tibia or leg bone (probably of a Red Deer,) found therewith, were discovered opposite the Copper Works about five feet below the level of the Old Dock Sill, or about ten feet below the original bed of the Pool, embedded in sandy gravel. This would give a depth of about thirty-two feet below the top line of the river wall of the Docks.

The exact depth at which the other specimens were obtained was not so accurately noted at the time of discovery, but as nearly as I can ascertain the Horns of the Deer and Cattle were found in the upper part of the Pool at a depth of about twenty-five feet below the level of the surface of the surrounding land, embedded in clay.

During the excavations roots and stumps of large trees in natural positions have also been found at slightly varying levels. One of these, an oak, I measured, and found the girth to be seven feet four inches, though much of the wood had been torn away. It was situated a little to the west of the great stank at the lowest level to which the excavations proceed, namely thirty-four feet below the top line of the Dock wall; further up the Pool the roots occur at a level of a foot or two higher. The clay beneath them is a boulder clay, and very much more tenacious than that above. At the foot of one of the trees at the higher end of the Pool were discovered two at least of the Horns of the large Ox.

It would appear to be highly probable from the presence and position of these roots and stumps, that the site of the late Pool had formerly been dry land, upon which lived and died the animals whose remains are now met with.

The Human Skull, though fully adult, is of small dimensions, particularly in the region of the forehead. It is about to be submitted to the critical examination of Messrs. Thurnam and Davies, who are engaged in the publication of an extremely valuable work on the skulls of the aboriginal and early inhabitants of Britain, entitled "Crania Britannica." This and some of the other bones bear traces of the polypidoms of marine Zoophytes and shells of Barnacles (*Balani.*)

Of the three species of Quadrupeds whose Horns are exhibited, two, the *Bos primigenius* and the *Bos longifrons*, are now utterly extinct. This does not necessarily imply any very high antiquity for the period at which the site of the Pool was occupied by dry land, for Professor Owen considers the *Bos primigenius* as in all probability identical with a race spoken of by Cæsar as not being much inferior to the elephant in size, and differing from all the domestic cattle by the great strength and expansion of its horns.

The Stag Horns however agree so well in character and form with those of the Red Deer of Modern Europe, that Professor Owen regards the

two animals as one and the same: the differences to be observed not warranting specific distinction. Full details of all three species will be found in the Professor's work on the "British Fossil Mammals and Birds," with notices of the various places in which their remains have been found.

Horns and Skulls more or less perfect are occasionally found at Leasowe imbedded in the peat and clay. Very fine antlers of the Stag, and an unbroken skull of the *Bos primigenius*, thence obtained, are in the possession of the Hon. Sir Edward Cust, the Society's President. The skull of the *Bos longifrons* now exhibited is more perfect than any I have yet seen. Small as the horns are they are probably those of a bull: they exceed in size many that have been discovered, some of which in the possession of Mr. H. Ecroyd Smith, and collected by him at Leasowe and Hoylake, he has obligingly allowed me to exhibit. I am also indebted to Mr. Morton for the horn of a female or young individual of the *Bos primigenius* found at Bootle which he has kindly lent me for the same purpose.

I subjoin dimensions of the skull of *Bos longifrons* and of the largest specimen of *Bos primigenius*. For the purpose of comparison I have added the measurement of other specimens quoted by Professor Owen.

THE GREAT FOSSIL OX, *Bos primigenius* of Bojanus.

	Skull from Wallasey, in the Liverpool Free Public Museum.		Skull from Atholl, in British Museum.*	
	Feet.	Inches.	Feet.	Inches.
Length of skull	2	4	3	0
Span between tips of horn cores	2	5	3	6
Curve of horn, outside	2	4		
" " inside	1	10		
Girth of base of horn cores	1	3		
Breadth of forehead between the horns	Greatest 12		0	10½
	Least 7			
Length of series of upper molar teeth	0	7	0	6½
Width between the orbits	0	11½		

It will thus be seen that large as is the specimen exhibited, it is inferior in size to that in the British Museum, which is itself exceeded by one described by Mr. H. Woods as discovered in the bed of the Avon in 1838, the horns of which between the tips measure four feet within half-an-inch.

* From Owen's British Fossil Mammals and Birds, pp. 501-2.

ON THE MANCHESTER ART-TREASURES EXHIBITION, 1857.

By George Scharf, Jun., F.S.A., &c.

(Read 15th April, 1858.)*

When the Members of the Historic Society of Lancashire and Cheshire visited the Manchester Exhibition† in the summer of 1857, (June 26th,) I very much regretted that circumstances prevented me from offering on the spot any detailed account of the various treasures of art which they proposed to examine; but I had already received strict injunctions from the Executive Committee not to attempt any explanation to the visitors in the galleries of the Exhibition. In consequence of this preclusion, I have availed myself of an invitation from the Society, and drawn up a slight general account of the development and various contents of the Exhibition, now no longer, alas! as a guide, but capable only of serving as a reminder to those who were fortunate enough to see and enjoy its chief glories, and to afford also some general record of the principal attractions which assembled so large a concourse of visitors from every quarter.

The local and historic associations connected with the Manchester Exhibition might naturally claim a special record for it in the pages of the Transactions of the Historic Society of Lancashire and Cheshire, and I feel myself especially honoured in finding myself entrusted with the task. As the wholesome fruit of peace, the *prototype* of Exhibitions, that of Hyde Park in 1851, claims a first and grateful recognition. It was the happy thought of the Prince Consort, and served to display in the most triumphant manner the relation of Great Britain with the rest of the world. Whilst, on this occasion, England found an opportunity of measuring her own industrial produce with that of all other nations, she strengthened also the means of improving and extending her resources.

* This meeting was held in the Theatre of the Royal Institution, where Mr. Scharf had the advantage of pointing to several of the most important pictures which had been contributed by the Institution to the Art-Treasures Exhibition, and which for this occasion, had been removed from the public gallery by permission of the President and Council.

† The term, "Art-Treasures' Exhibition," a modification of "Exhibition of Treasures of Art," first appeared in the *Illustrated London News*, and seems derived from the title of Dr. Waagen's volumes, published in 1854.

In 1851, home manufactures and inventions of all kinds were prominent, and the abundance of Foreign produce made England appear as the great mart of the world. But native fine arts held a comparatively subordinate position. Sculpture, however, from all nations was extensively introduced in every part of the building, not only for its own sake but as a means of ornamentation. It became in fact one of the most important sources of attraction and admiration. At Manchester, sculpture was less satisfactorily provided for, and that mainly on account of peculiar restrictions hereafter to be mentioned, whilst painting, which has so eminently distinguished the Art Treasures' Exhibition, was only regarded incidentally at Hyde Park in 1851. It may be well on this occasion to glance at the various gatherings of art and industry which have been held previously to the one which we have so recently enjoyed.

Periodical Industrial Exhibitions have long been known in France, and I remember visiting a magnificent gallery erected for that purpose in the Champs Elysées, at Paris, during the Autumn of 1839, when manufactures of every kind were displayed with surpassing taste.

At London, in the year 1849, an excellent exhibition, although of a very limited character,—being confined to works of art, curiosities, and objects of vertù—was held under the name of the Mediæval Exhibition, in the Rooms of the Society of Arts in the Adelphi. The chief promoters of this were Mr. A. Franks, now of the British Museum, Mr. Albert Way, Mr. Hailstone, and Mr. Nisbett.

The Society of Arts thus had the credit of being the first to shew the advantage of forming a temporary museum in London, although the system had long been adopted on a limited scale by Mr. Way and Mr. Tucker, at the annual meetings of the Archæological Societies when visiting the principal Cathedral cities of this country. The Archæological Institute had therefore some claim upon the notice of the Manchester authorities at the time of their visit to that City during the Chester congress in 1857.

So obviously beneficial did the scheme of the Hyde Park Exhibition seem to all classes, that great and universal efforts were made to ensure its permanence; this however the very nature of the preparatory engagements precluded; but a similar building on a more extended scale was determined on by private enterprise, to which the public might enjoy permanent access.

In this scheme, which resulted in the Sydenham Crystal Palace, *education* and illustrations of art were to be the principal features.

During the organization and progress of this earnest testimony to the appreciation of the ever to be remembered *great* exhibition of 1851, a temporary fabric was erected in Dublin, and the Exhibition held in that city became the principal art feature of 1853. In many respects it resembled the parent collection in the display of both industrial and foreign art; but it comprehended less of foreign productions, and the building was on a comparatively small scale.

At Dublin the novel feature was the prominence given to paintings of all nations, both ancient and modern.

To promote this many very distinguished owners sent liberal contributions, and with this Exhibition the names of Mr. Dargan and Mr. J. C. Deane have been most honourably connected.

In 1854 the Crystal Palace was opened at Sydenham, under the especial patronage of Her Majesty and the Prince Consort, who, both during the course of construction and ever since, have manifested the deepest interest in its progress.

In America also, the principle was recognised by the opening of an Exhibition at New York, which the promoters of the '51 Exhibition were invited to attend.

At Paris, in 1855, a great triumph was achieved. There in the "Ex-"position Universelle" the products of all nations were fully recognised, and France herself had reason indeed to be proud of the artistic strength which she thus had the power of displaying.

Painting, there, was formed into a special and distinct department, although, with very small exception, it consisted entirely of modern pictures, both native and foreign. In water colour painting the English nation took a high stand.

The spirit for Exhibitions still being strong, our northern manufacturers after having displayed, in the Exhibitions of London, Dublin and Paris, their power and taste,—not only as creators, but dispensors of an unparalleled amount of industrial art,—might naturally desire to make both their means and refinements yet further manifest by inviting the world to meet at a centre, *from* which hitherto products only had radiated. Man-

chester was naturally regarded as that industrial point: a fact indeed made evident by the extraordinary confluence of the railroads, and by its exact geographical position between London and Edinburgh. There seems to have existed for some time in that district a strong predisposition in favour of such an undertaking, so that the bold thought and practical readiness of two or three gentlemen, when once announced, took immediate form and promptly received the countenance and support of those best able to carry out the scheme.

The distinctive features of the enterprise were immediately determined on, and it is remarkable that from first to last these were never lost sight of or even in any degree modified. The organisers best knew the amount of time which business people could devote to preparation and expectation; but, judging now from the results, there can be little doubt that the value of the display was much impaired by want of sufficient time between the appointment of officers and the opening of the Exhibition.

The first thought of the Manchester Exhibition was started by Messrs. J. C. Deane, P. Cunningham, T. Fairbairn and Ashton, in the spring of 1856. In May of the following year it was to be completed. When we remember the extent of the Exhibition and its numerous branches of art, and consider the amount of work to be achieved within a single year; namely, contributions to be applied for, works of art to be selected and negotiated about, in all quarters of the United Kingdom; a building to be constructed expressly to receive them, and then, as soon as housed, how everything was to be described, catalogued, and arranged ready for public view, it appears almost impossible. The work however could only be effected by division of labour and the employment of many hands, and for this purpose Directors of the several departments were appointed; these gentlemen exercised an absolute control under the authority of the Executive Committee.

On the 26th of March, a meeting was held at the Town Hall, Manchester, and a guarantee fund was opened, to which in the course of a few days thirty-two gentlemen gave their signatures for £1000 each, and sixty for £500 each. Before the end of June, the guarantee fund amounted to £70,000.* The subscribers were then constituted into a general council,

* In the first circular issued by the Committee, the names of subscribers to the guarantee fund numbered upwards of one hundred, and among them 36 noblemen and gentlemen subscribed for £1000 each. The total amount of the fund at that time was £72,500.

with the late Earl of Ellesmere as the President, and from these again the following seven gentlemen were selected to form the Executive Committee.

Thomas Fairbairn, Esq., Chairman,
James Watt, Esq., (Mayor,)
Thomas Ashton, Esq.,
William Entwisle, Esq.,
Sigismund Stern, Esq.,
Edmund Potter, Esq.,
Joseph Heron, Esq., (Town Clerk.)

On the 13th of August, the architectural design of Mr. Salomons having been approved, the foundation for the Exhibition building was laid. Messrs. Young and Co. were the contractors, and Mr. W. Dredge became the acting engineer.

Mr. J. C. Deane took office as the General Commissioner, and Mr. Peter Cunningham assumed the control of the Portrait Gallery, whilst to myself in September were entrusted the duties of Art Secretary to the Committee and Director of the Gallery of Ancient Masters and Classic Antiquities. I declined from the first to have anything to do with modern paintings or to take any part whatever in the removal of works of art after the closing the Exhibition. The necessity of forming a collection of objects of general art and curiosities* soon became apparent, and Mr. J. B. Waring was appointed at the head of that department, whilst Mr. William Smith, Mr. Dominic Colnaghi, and Mr. E. Holmes, whose untimely death was deeply to be regretted, undertook the collection and arrangement of the prints and original drawings.

The main dimensions of the building were as follow—Extreme length 704 feet by 200 feet in width; the great hall internally measured 632 feet in length; the nave was 104 feet wide, the side halls 48 feet wide and 432 feet in length, their height in centre 50 feet 6 inches; the height of the nave in centre 56 feet 6 inches; entire length of transept 200 feet, width 104 feet; the oriental court 72 feet by 48; the principal water-colour gallery 200 feet long by 24 feet; smaller galleries 52 feet by 24 each.

* The success of an Exhibition of Ancient Furniture, &c., held at Gore House, Kensington, in 1853, had sufficed to shew the effect and importance of such an assemblage.

Early in July, 1856, the Royal sanction and patronage were received, and the Prince Consort evinced a deep interest in the schemes and report of progress when submitted to His Royal Highness by a deputation from the Committee.

With reference to future prospects and the measures to be adopted, the Prince was pleased to address a letter to the President of the Council of the Exhibition. The main questions were so definitely set forth and the whole subject was viewed in so just and clear a light that I feel it will be gratifying my hearers if I quote a few passages from this valuable document.

"How to succeed in collecting such treasures, fondly cherished as they "are by their owners, who are justly jealous of their safety, is the problem "to be solved.

"In my opinion the solution will be found in the satisfactory proof of "the usefulness of the undertaking. The mere gratification of public "curiosity, and the giving an intellectual entertainment to the dense "population of a particular locality, would be praiseworthy in itself, but "hardly sufficient to convince the owners of works of Art that it is their "duty, at a certain risk and inconvenience, to send their choicest treasures "to Manchester for exhibition.

"That national usefulness might, however, be found in the educational "direction which may be given to the whole scheme. No country invests "a larger amount of capital in works of Art of all kinds than England; "and in none, almost, is so little done for Art-education! If the collection "you propose to form were made to illustrate the history of Art in a "chronological and systematic arrangement, it would speak powerfully to "the public mind, and enable, in a practical way, the most uneducated eye "to gather the lessons which ages of thought and scientific research have "attempted to abstract; and would present to the world, for the first time, "a gallery such as no other country could produce, but for which, I feel "convinced, the materials exist abundantly in private hands among us. * *

"A person who would not otherwise be inclined to part with a picture "would probably shrink from refusing it, if he knew that his doing so "tended to mar the realization of a great National object."

I had already formed an *ideal* gallery on paper, taking the choicest specimens of every master in the history of art, as far as I remembered their existence in this country. This plan, I found, corresponded very satisfactorily with the scheme recommended by His Royal Highness, who, in pursuance of his promise to Lord Ellesmere, forwarded a methodized catalogue of the painters of all schools for their special service.

The Prince Consort permitted a large selection to be made from his unrivalled collection of paintings by the early German masters at Kensing-

ton Palace, and Her Majesty promptly granted leave to the Committee to select paintings from the Royal Galleries at Windsor, Hampton Court, and Buckingham Palace. This gracious condescension had the immediate effect of giving impulse to others, and, in addition to the public announcement of these facts, copies were largely circulated among picture owners, of the Prince Consort's letter to Lord Ellesmere. Lord Ellesmere himself at once volunteered to contribute the following pictures—

1.—The Circumcision, by Mazzolino di Ferrara.
2.—A large Triptych of Saints, by Andrea da Salerno.
3.—The Entombment, by Ludovico Caracci.
4.—Assemblage of Saints, by Guercino.
5.—A Portrait, (No. 670) by Van Dyck.
6.—Landscape, by Jacob Ruysdael.
7.—The Immaculate Conception, by Guido Reni.
8.—A Village School, by Jan Steen.
9.—A Charge of Cavalry, by Wouvermans.
10.—The Satin Gown, by Terburg.
11.—A Girl Sewing, by N. Maes.

This list does not include any of the pictures which belong to the celebrated Bridgewater Gallery. These had all been acquired by the Earl himself; but there is little doubt that had his Lorship's life been spared, some, at least of the world-renowned chefs d'oeuvre of Raphael, Poussin, and Titian would have ennobled the collection at Old Trafford.

Among the foremost supporters and promoters of this great undertaking, were the Duke of Manchester, the Duke of Newcastle, and the Earl of Derby. The last nobleman had bought largely at Strawberry Hill, the first possessed an extensive collection of family pictures, hitherto but little known. Lord Overstone, who became, on the decease of Lord Ellesmere, President of the Council of the Exhibition, also contributed a large quota of his first-rate pictures. But on the extensive list of Noble followers of the Royal examples, the names of the Earl of Darnley, the Earl of Yarborough, and Lord Ward claim a foremost place; since, not only should the genuine excellence of their property be considered, but it should be borne in mind that they intimated a willingness to allow selections to be made from their galleries to an almost unlimited extent. By this good fortune many pictures from the Orleans gallery, which had

been for so many years withdrawn from public observation, were at once secured. Pictures also which had, at a still earlier period, belonged to Lord Arundel, and many that had till recently graced the leading collections of Italy, ensured a certain *tone* to the Exhibition. Notwithstanding the prompt response which proceeded from so many important quarters, it is not to be concealed that the conductors of the preparations felt serious difficulty in the total refusal of assistance from several of the most widely celebrated collections of art. The committee learnt at a comparatively early period that nothing was to be expected from Blenheim, Hamilton Palace, the Bridgewater Gallery, Stafford House, Burleigh, Hatfield House, Longford Castle, Belvoir Castle, Orwell Park, Lord Dover or Lord Ashburnham. Insuperable obstacles also prevented any selections being made from Dulwich, Sir John Soane's, the Fitzwilliam Museum at Cambridge, or the National Galleries of London.

These incidental disappointments however were in some degree compensated by the munificent contribution of some of the choicest pictures belonging to the Marquess of Hertford,* forty-four pictures in all; and these having a peculiar celebrity, and being invariably inaccessible were looked for with the more eager curiosity. The Royal Institution of Liverpool, which may be regarded as the earliest formed gallery of Italian pictures from the 13th to the 16th centuries, in England, most liberally placed the whole series at the service of the Committee. This collection had, in fact, been founded by the illustrious Roscoe, aided by his distinguished friend Mr. W. Y. Ottley.

The Museum of Ornamental Art was now, by the varied and attractive

* 1. Murillo—Adoration of the Shepherds. 2. Ditto—St. Thomas of Villanueva. 3. Ditto—Joseph and his Brethren. 4. Ditto—The Annunciation. 5. Ditto—A Holy Family. 6. Van Dyck—Philip de Roy. 7. Ditto—His Lady. 8. Ditto—Female Portrait. 9. Ditto—Male Portrait. 10. Velasquez—Don Balthazzar. 11. Ditto—Ditto. 12. Ditto—Lady with a Fan. 13. Ditto—Don Balthazzar. 14. Rembrandt—The Unmerciful Servant. 15. Ditto—Jan Pelicorne. 16. Ditto—His Lady. 17. Ditto—Jan Pelicorne. 18. Reynolds—Strawberry Girl. 19. Ditto—Nelly O'Brien. 20. Ditto—Miss Bowles. 21. Rubens—The Rainbow Landscape. 22. Ditto—Holy Family. 23. Hobbema—Landscape. 24. Ditto—Ditto. 25. Salvator Rosa—Landscape. 26. Andrea del Sarto—Holy Family, 27. Watteau—Fête Champetre. 28. Lancret—Ditto. 29. Pater—Ditto. 30. Van de Velde—Large Sea Piece. 31. Adrian Van de Velde—Migration of Jacob. 32. Greuze—An Offering. 33. Ditto—A Girl with a Dove. 34. Weenix—Dead Game. 35. N. Poussin—The Seasons. 36. G. Poussin—Tivoli. 37. Champagne—The Nativity. 38. Sassoferrato—The Marriage of St. Catherine. 39. Hilton—Nymphs Bathing. 40. De la Roche—A Mother and Child. 41. Ruysdael—A Waterfall. 42. Gainsborough—Portrait of a Lady holding a Miniature. 43. Descamps—An Oriental Scene. 44. Horace Vernet—Algerine subject.

nature of its contributions, growing rapidly into favour and importance. Mr. Waring, the director, found himself admirably supported by the co-operation of Messrs. Redford and Dudley, and Mr. Chaffers, a professed dealer in objects of art and vertù, rendered especial service by the experienced manner in which he made arrangements for the transmission of the various contributions he was empowered to collect. Meanwhile Mr. Holmes had quietly pursued his vocation by visiting the most celebrated possessors of the rarest engravings, and he was afterwards induced by the Committee to undertake the collecting and arranging the water-colour drawings for which his knowledge and taste peculiarly qualified him, whilst the universal trust and influence reposed in Mr. Dominic Colnaghi, the eminent printseller, rendered him the most fitting manager both of the transport and arrangement of the engravings. The photographs, reduced in extent from what had originally been intended, were placed under the care of Mr. P. Delamotte, whilst to Dr. Royle alone was assigned the great responsibility of collecting and arranging the beautiful contents of the Indian court.

Modern art, especially the works of living artists, was justly held from the first to be one of the principal attractions. It was perhaps, at the same time, one of the most arduous departments to be carried into effect, inasmuch as artists, when the holders of their own works, are generally difficult to correspond with, and where called upon to decide upon their own merits would become still more so. The committee however devised an admirable plan. Every artist of eminence received a letter requesting him to specify a certain number of what he considered to be his best works, and to name their present possessors. From this list again the committee selected the pictures most desirable and accessible to them. Letters were immediately dispatched to the respective possessors, and by this means an excellent and impartial collection was formed. Independently of painting and of industrial art, another and a very profitable source of attraction was devised for visitors to the exhibition, in the establishment of a first-rate orchestra, placed under the management of Mr. Charles Hallé. On this subject we cannot expatiate; but in considering the popularity which the Art Treasures ultimately attained, it would be unfair to leave this point of attraction altogether unnoticed. The relief also afforded by the gratification of another sense, after so long straining the eye and memory in the

various galleries should be gratefully remembered, whilst at the same time it may be admitted that the visitor's devotion to *fine art* remained unbroken.

Having now glanced at the various stages by which the exhibition attained completion: having named the principal contributors of the best materials, and those who were employed to set them in order, it may be acceptable to enumerate the main points of rarity and attraction in each department, and finally to consider what have been the immediate results upon the visitors and those who took an interest in the undertaking, and still further to endeavour, as far may be, to calculate the effect which is likely, in future times, to accrue from it.

Among objects of ancient art placed chiefly in the southern transept and in the south aisle of the nave towards the wall of saloon A, were many small objects of considerable importance. Two large glass cases contained some very fine specimens of painted Greek vases of the best period. These were contributed by Mr. Mayer, of Liverpool, and Mr. Addington, of London. Most of them had been published whilst formerly in the possession of Dr. Emil Braun, Campanari and Mr. Rogers. Another case contained an extensive series of small bronze figures, pateræ and various ornaments contributed also by Mr. Mayer, Mr. Pulszky, and Mr. Norton. Many Egyptian antiquities were placed in some of the lower compartments of the cases, and among them the signet of Pharaoh was especially admired. A fine large Grecian painted vase of an early period, representing women at the fountain Enneacrunos, which formerly belonged to Rogers the poet, now Mr. Addington's, and a vase representing the death of Hector, belonging to Mr. Mayer, deserve special mention. Among the bronzes, a beautiful statue of Venus, found in Caria, once the property of Mr. Hertz; an ancient Etruscan mirror published by Micali and Gerhard, and a curious little bronze male statue, with silver letters inserted in the thigh, should not be forgotten. A Roman sword of parade, attributable to Tiberius, and found at Mayence, was also displayed by Mr. Farrer. A very rare Roman painting, on glass, contributed by Mr. W. Dilke, and numerous consular ivories of great value in the history of art, belonging to Mr. Mayer,* and for-

* See the wood-cut illustration to this essay of the Diptych of the Roman Consul Clementinus which formed a portion of this series. The Historic Society is indebted to Mr. Murray of Albemarle street, Messrs. Day of Gate street, and Messrs. Bosworth and Harrison of Regent street, for the advantage of permission to use numerous wood engravings selected from many of the well-known works which they have published.

FROM LABARTE'S HANDBOOK TO THE ARTS OF THE MIDDLE AGES.

IVORY CARVINGS, FORMING A DIPTYCH OF THE ROMAN CONSUL CLEMENTINUS, A.D. 513.

From the Fejérváry Collection. Contributed to the Manchester Exhibition by Mr Joseph Mayer, F.S.A.

merly in the Fejéváry collection, have always been regarded as especial celebrities. Of antique sculpture in marble, there was a very limited display, and that obviously on account of the difficulty of moving fragile objects when ponderous and massive.

The Pembroke marbles at Wilton and Ince Blundell, and the Worsley marbles formerly at Appuldurcombe, (all celebrated and published collections,) were mainly detained for these reasons. The late Mr. Smith Barry, notwithstanding, sent a very liberal contribution of statuary from Marbury Hall, and his great sculptured vase, (originally the stonework to the mouth of a well, but adapted in modern times to its present elegant shape), formed one of the noblest features in the exhibition, and afforded a magnificent centre to saloon B, containing the works principally of Titian, Paul Veronese and Rubens. It was much to be regretted that many large sculptures from Nineveh and Persepolis, placed at the disposal of the committee and actually forwarded by Lady Charlotte Schreiber, Mr. Layard, Sir Henry Rawlinson, Sir William Ouseley, The Lord Mayor, and Mr. Stirling, were not ultimately exhibited.

Although the ownership was not during the period of the exhibition satisfactorily ascertained, two other specimens of antique statuary merited particular admiration; the one was the portion of a very beautiful female face, and the other the fragment of a young man's head with Alexandrian features and what seemed to be a portion of a lion's skin covering the temple.

We now enter upon the Pictorial features of the southern gallery (saloons A, B and C) of the ancient masters.

It will be borne in mind that I adopted one leading principle in the arrangement of the pictures entrusted to my care. I desired not only to arrange them in chronological order, but to mark as far as possible the contemporaneous existence of opposite schools.

The long southern wall as far as the middle of saloon C where the termination of the series was noted both in the catalogue and on the wall,* was therefore devoted *exclusively* to Italian art; and on the opposite wall were ranged the paintings of the *foreign* nations to correspond as nearly as possible, in

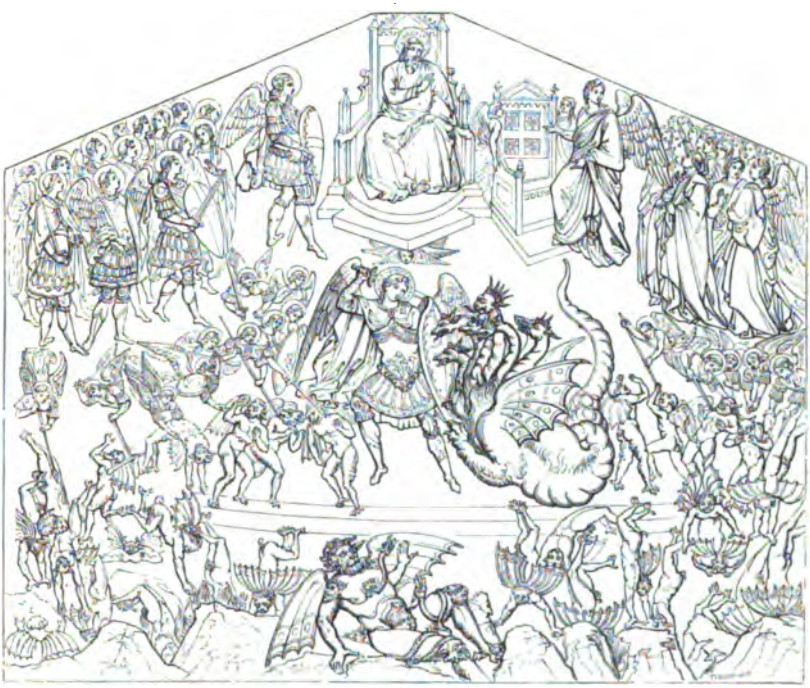
* This termination of the Italian line was in a measure necessitated by the great number of large pictures of the Spanish and Flemish Schools, and also by the desirability of placing the magnificent Charles I, by Van Dyck, as a termination to the vista along the Southern galleries.

point of time, with the dates of the Italian ones facing them. Thus the German, Flemish and French schools held their due succession; but owing to the vast crowd of pictures, and from the previous uncertainty of their size, although many precautions had been taken, it was very difficult to carry the arrangement strictly into effect. From paucity of materials to illustrate the works of the predecessors of Rubens, and from the abundant pressure of the works of his followers, it became imperative to arrange the works of this great Flemish colourist directly opposite to those of Titian, whereas, in reality, Rubens came into the world a year after Titian died. The most ancient painting which the galleries contained was a fragment of a fresco* from one of the ancient Roman tombs described in Middleton's works, and once at Strawberry Hill. It is now the property of Mr. Wentworth Dilke. The traditions of painting from the Byzantine period, and some of the modern Russian school, were also seen in various contributions from the Prince Consort, Christ-Church, Oxford, and the Museum of Norwich.

One of the most interesting pictures of the early period in the history of British art was the small picture, in two compartments,† representing Richard II. with his patron saints, in presence of the Virgin and Child surrounded by angels. This valuable painting was contributed from Wilton House, by the Right Hon. Sydney Herbert, and deserved comparison with another contemporary portrait of the unfortunate monarch, belonging to the Jerusalem Chamber, Westminster, which was hung at the commencement of the British Portrait Gallery.‡ Whilst yet dwelling upon the infancy of art, we should remember Lord Ward's contribution of Fra Angelico's Last Judgment,§ which although feebly designed was crowded with figures, finished like a miniature, and bathed in colours of the purest and most undying hue. Near it was hung a curious fragment, on a large scale, belonging to Mr. Layard,|| painted in fresco, and forming almost the only portion rescued from destruction of Signorelli's great composition at Arezzo, representing the fall of the angels. It is especially described by Vasari, and forms one of the landmarks in the history of art. A genuine and rare early Sienese work, of a most unusual subject, by Simone Memmi, "The return of our Saviour to His parents after having disputed with the

* No. 1 of the official catalogue of the Manchester Exhibition, May 20th, 1857.
† No. 42. ‡ P. G. No. 15. § No. 58. || No. 39. See the accompanying woodcut, drawn by G. Scharf, Jun., and liberally lent for the present volume by Mr. Murray, of Albemarle Street.

FROM KUGLER'S HANDBOOK OF PAINTING.



COMPOSITION OF THE FALL OF THE REBELLIOUS ANGELS.

By Spinello Aretino, about 1410, to illustrate the fragment of fresco contributed by Mr. A. H. Layard to the Manchester Exhibition No. 39 of the Catalogue.

FROM KUGLER'S HANDBOOK OF PAINTING.

THE TRIUMPH OF SCIPIO.

By Andrea Mantegna. Contributed by G. Vivian, Esq., to the Manchester Exhibition. No. 103 of the Catalogue

"Doctors in the Temple,"* was contributed by the Liverpool Royal Institution. A primitive attempt of one of the Venetian painters who rose to such glory in the days of Titian deserves remembrance. It was a large square altar-piece, by Carlo Crivelli,† crowded with figures, having the Virgin and Child enthroned in the centre with St. Peter as Pope, on his knees receiving the keys from them.

Bellini, also of the Venetian school, was well represented; but Andrea Mantegna, his contemporary, who wrought principally at Padua and Mantua, here deserves especial notice. He painted the celebrated Triumphs of Julius Cæsar for the Duke of Mantua, which are now at Hampton Court, and the long, dingy but less mutilated picture, of the Triumph of Scipio, seen at Manchester,‡ and the property of Mr. Vivian, which afforded altogether the most perfect epitome of the merits and peculiarities of the painter.

Perugino, the master of Raphael, was to be seen in a large and characteristic picture,§ contributed by Lord Northwick from Thirlestane House; but much more favourably in four exquisite little pictures (from the predella or step of some large altar-piece), belonging to Mr. Alexander Barker. They represent the Nativity, the Baptism, Christ and the Samaritan woman, and "Noli me tangere." Of all the ancient pictures in the Exhibition, the Holy Family (unfinished), attended by four angels, attributed to Michael Angelo,|| excited most interest among connoisseurs. It was sold as the work of Ghirlandajo (the master of Michael Angelo) to the Rt. Hon. Hy. Labouchere; but the well-known critic Von Rumohr had already pronounced it to be an emanation of the far greater pupil, an opinion which has since been promulgated by Dr. Waagen, and in consequence of his high authority, the name of Michael Angelo seems now to have been very generally adopted.

Of works by that most eminent of all painters, Raphael Sanzio d'Urbino, the Manchester Exhibition contained a few genuine examples; but none, in fact, sufficient to afford a fair evidence of his transcendant power either in largeness of style, expression, drawing or richness of composition. The Crucifixion, from the gallery of Cardinal Fesch,¶ belonging to Lord Ward, and the Agony in the Garden, from the Gabrielli palace at Rome, and now the property of Mr. Fuller Maitland,** served to show Raphael when under

* No. 37. See the accompanying wood-cut drawn by G. Scharf, Jun., and contributed by Mr. Murray.

† No. 80. ‡ No. 102. See the illustration drawn by G. Scharf, Jun., and contributed by Mr. Murray. § No. 117. || No. 107. ¶ No. 123. ** No. 134.

the influence of his master Perugino. The pictures of the Three Graces* from Lord Ward and the two Madonnas† from Earl Cowper indicated his first efforts towards a freer style: this emancipation was shown in the glass-obscured Madonna and Child contributed by Mr. R. J. Mackintosh,‡ who had purchased it from the collections of Henry Hope and Rogers the poet. Two fine examples of Raphael's more developed period were afforded by the Earl of Warwick—one on a large scale, the Assumption of the Virgin,§ when he was studying with, and no doubt aided by, his friend Fra Bartolommeo—and, the other, a striking portrait, in peculiar costume, of the beautiful Joanna of Arragon.|| This is a well-known and often-referred to duplicate of the picture in the gallery of the Louvre. Fra Bartolommeo's own work, evincing an astonishing power of colour, might be seen in a Riposo¶ contributed by Earl Cowper from Panshanger. A picture also of the Saviour bearing his Cross*[2] hanging near it, and attributed by Mr. Brett, the owner, to Raphael, left too deep an impression on the minds of spectators to be omitted from this list. The remaining pictures which had Raphael's name were either of a minor class or fabrications and old school copies. A portrait of Copernicus,†[2] by a contemporary of Raphael, was naturally regarded with much interest; but a truly fine work of art, a Holy Family, by Sebastiano del Piombo,‡[2] was for the most part passed over on account of the dullness of surface and want of attractive colours. One Francia alone held a high place: it represented the Baptism of our Saviour,§[2] and was contributed by Her Majesty from Hampton Court Palace. From the same source also proceeded a large picture powerfully illustrative of the Michael Angelo school—Venus and Cupid coloured by Pontormo upon the outlines prepared by Buonarroti. Michael Angelo, as is well known, frequently bestowed this help upon his favourite scholars; and the great picture of the Raising of Lazarus, now in the National Gallery of London, is a remarkable instance, since in that picture the figure of Lazarus appears to be almost entirely his work.

The early Milanese school was marked by a valuable picture, by Ambroggio Borgognone,||[2] belonging to the Prince Consort. It is clear and brilliant in colour, and represents the Virgin and Child upon an elevated rocky throne: the Baptist stands on one side and St. Ambrose protects a kneeling donor on the other. It is signed with the artist's name, and dated 1510.

* No. 139. † Nos. 136 and 141. ‡ No. 133. § No. 147. || No. 158. ¶ No. 118.
*[2] No. 121. †[2] No. 160. ‡[2] No. 161. §[2] No. 132. ||[2] No. 122.

A curious specimen of early Ferrarese Art, by Mazzolino di Ferrara, "the "Egyptians drowned in the Red Sea,"* shews the slow progress with which the later refinements penetrated some minds, if not into particular geographical districts. This Chinese-looking picture bears the date of 1521, one year after Raphael had ceased to exist.†

That the school of Milan attained peculiar eminence is seen in the fine picture by Gaudenzio Ferrari,‡ who studied under Raphael, the property of Mr. Holford. A grand picture marking another epoch of art was the allegorical portrait of Charles V, painted by Parmigianino in 1530. As a work especially mentioned by Vasari, it merits particular attention.§ It is now the property of Mr. Angerstein. Titian, the greatest of Venetian colourists, was nobly represented. Among the vast number it will suffice to particularize Lord Darnley's Europa,|| and the portrait of Ariosto;¶ a portrait called Alessandro de' Medici,*[2] from Hampton Court, and a comparatively small picture of a Riposo, with back ground of rich trees, and a glowing sunlight penetrating them.†[2] This, the property of Mr. Holford, and a composition frequently repeated, is a veritable chef d'œuvre. Tintoretto was seen to the fullest advantage, with all his excellence and peculiarities, in the two large pictures from Hampton Court, the Esther, Ahasuerus and the nine Muses,‡[2] and the large Leda,§[2] formerly in the Orleans collection. Paul Veronese, however, was not seen at Manchester to equal advantage. The grand ceiling pictures which Lord Darnley acquired from the Orleans gallery ||[2] were not adequate to the display of all his powers, nor did the sketch¶[2] from Miss Burdett Coutts, and once belonging to Mr. Rogers, suffice even to afford a type. Annibal Caracci was seen in great force. The fine Lucca picture*[3] contributed by Speaker Denison, and the great St. Roch,†[3] formerly an Orleans picture, and now Mr. Wadmore's, fully sufficed to manifiest his power. A work of the same artist, from Castle Howard, on a smaller scale, and by no means, equally ex-

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* No. 178. † It was not by oversight or accident, as surmised by the writer of the article in the National Review, page 203, that this picture came jarringly upon the spectator, after he had been enjoying the power and delicacy of Raphael and Correggio. I desired especially to shew the slowness of some masters in adopting a larger and freer style, and with the same object also I introduced the little Greek picture of St. George, No. 189 on the east wall of saloon C. See note on page 25 of the Exhibition Catalogue.—G. S.

‡ No. 235. § No. 210. || No. 259. ¶ No. 257. *[2] No. 256. †[2] No. 301.
‡[2] Nos. 314 and 274. §[2] No. 302. ||[2] Nos. 285–288. ¶[2] 306.
*[3] No. 329. †[3] No. 327.

pressive of the painter's remarkable peculiarities and excellencies, was the so-called "Three Maries."* This picture obtained from the first a most remarkable amount of popularity with the visitors to the exhibition, although I am afraid it is but a proof of the gregariousness of large assemblies and the readiness with which the general mass of people follow that which a few bold mouths praise. Had they been previously acquainted with the admirable engraving which Sharpe executed from it, and which really *is* a first-rate work of art, their eagerness to see the original might have been understood. The picture, although heavily painted, is powerfully dramatic.

The inspired features of the upturned countenance of St John,† also from Castle Howard, and the figure of St. Agnes with folded hands,‡ from Windsor Castle, were fine examples of Domenichino the pupil of Annibal Caracci. When once seen, they excited universal interest; but they are not like the little picture I have previously offered remarks upon.

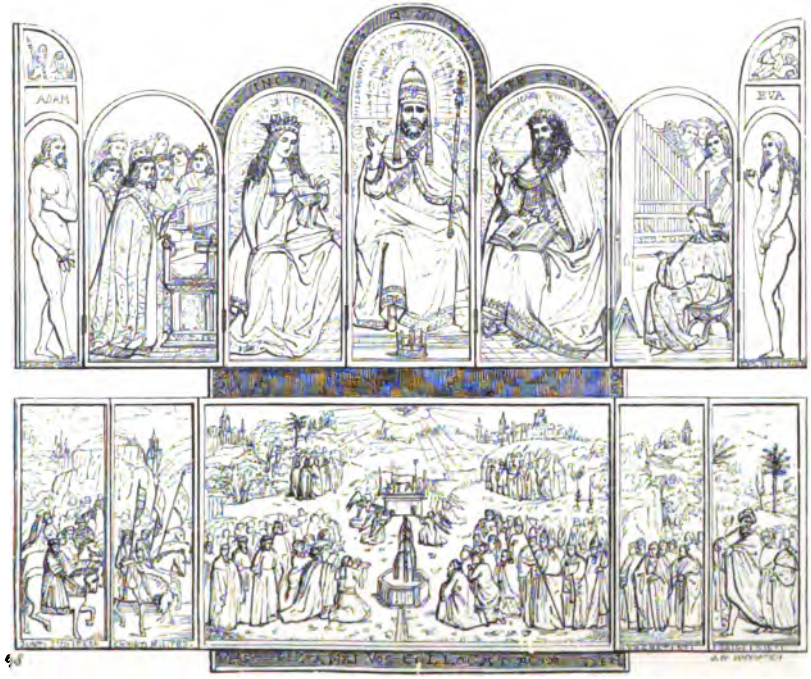
The number of pictures of excellent quality belonging to the Spanish school, especially by Murillo, was a remarkable feature of the Manchester Exhibition. The vestibule between saloons B and C was almost entirely filled with the works of Murillo alone. In this recess the two pictures belonging to Sir Culling Eardley,§ and the Madonna and Child,‖ which Lord Overstone acquired from the Santiago and Berwick collections, shone brilliantly; nor can we forget the Good Shepherd,¶ contributed by Baron Rothschild, and originally the *pendant* to the lovely St. John and the Lamb, now in the London National Gallery. Velasquez also was seen to great advantage, even in close proximity to Van Dyck, at the extreme end of the gallery, and the combination was in many respects a happy one, since it afforded a rare opportunity for an immediate comparison of the style, subject, and treatment adopted by each great master. The Olivarez,*[2] and Philip IV and his Queen†[2] were superlatively fine examples of portraiture.

The contributions of Colonel Hugh Baillie, Mr. T. P. Smyth, and Mr. Farrer, of Bond street, rendered especial service in maintaining the reputation of this great painter, the forerunner and patron of Murillo.

We now glance back to the upper end of the north wall, where the series of German art commenced, facing Italian works of the corresponding

* No. 310. † No. 341. ‡ No. 334. § Nos. 641 and 643. ‖ No. 642. ¶ No. 647.
*[2] No. 737. †[2] No. 738.

FROM KUGLER'S HANDBOOK OF PAINTING.



THE GREAT ALTARPIECE,

By Hubert and John van Eyck, completed in 1432, for the Church of St. Bavon at Ghent. Contributed by L. Lemmé, Esq., to the Manchester Exhibition. No. 375 of the Catalogue.

FROM KUGLER'S HANDBOOK OF PAINTING.

"VIRGO SAPIENTISSIMA,"

One of the upper compartments of the Great Altarpiece by the Brothers Van Eyck.
See No 375 of the Manchester Exhibition in 1857.

FROM KUGLER'S HANDBOOK OF PAINTING.

THE MISERS.

By Quentin Matsys. Contributed by Her Majesty, from Windsor Castle, to the Manchester Exhibition. No. 445 of the Catalogue.

period. At this point I may observe that, Italian art having existed long anterior to the earliest efforts of the Teutons, all antecedent examples were placed on the cross wall, running north and south, forming, therefore, an isolated range of art, down to the year 1400.

With the fifteenth century German and Flemish art began, and the starting subject at Manchester was a very imposing one.* It presented the entire series of pictures, in their undoubtedly original order of arrangement, forming the great altarpiece, or Retable, in the cathedral church of St. Bavon, at Ghent. This old copy, probably of the sixteenth century, was painted on large sheets of strained canvas, whereas the originals, by the Brothers Van Eyck, having been painted on separate panels, have been unfortunately dispersed. The copy at Manchester afforded the only extant authority, or clue, for their original arrangement.

Of the succeeding period a most valuable series of pictures was contributed by the Prince Consort. Indeed without this bounty and the aid of Lord Carlisle, the Duke of Newcastle, the Rev. J. M. Heath, Mr. Beresford Hope, Mr. J. H. Green, and Sir Culling Eardley, the earlier productions of the German school would have been wanting altogether. At the period of the Manchester Exhibition, not one of the following masters, although great and important in their way, was to be found in our National Gallery catalogue :—Van der Weyden, Meister Stephan, Grünewald, Memling, Wohlgemuth, Mabuse, Quentin Matsys, Martin Schön, Cranach, Lucas Van Leyden, Bernard Van Orley, Burgkmayer, Herri de Bles, Patenier, Horenbout, Van Cleef, Pourbus, Sir Antonio More, and Janet. All these masters were admirably represented at Manchester; a few of these names however had been already familiar to the public who visited Hampton Court. Most prominent among the foregoing pictures were two comparatively small ones, by Memling,† belonging to the Rev. Messrs. Heath and Fuller Russell; the far famed Misers, from Windsor Castle; ‡ an altar piece, by Quentin Matsys,§ contributed by Mr. J. H. Green; St. Peter and St. Dorothea,|| by Meister Cristoph, from Kensington palace, and the universally admired Chef d'œuvre of Mabuse, the Adoration of the Kings,¶ from Castle Howard. The portaiture by Sir A. More, Van Cleef, and Pourbus,

* No. 375—See the accompanying key-illustration of the entire series of this important work, with one portion enlarged, drawn by G. Scharf, and contributed by Mr. Murray.

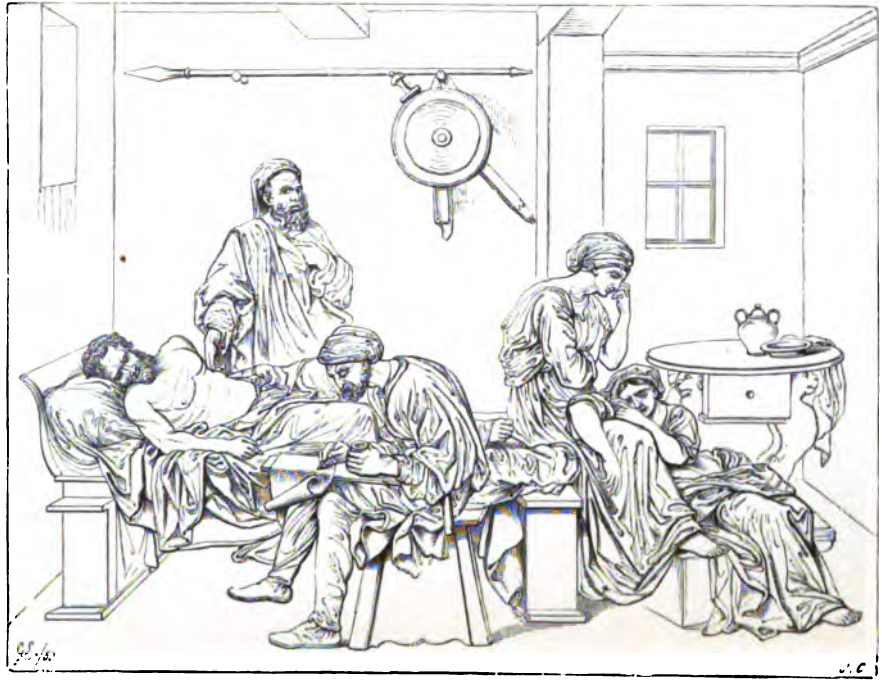
† Nos. 397 and 399. ‡ No. 445—See accompanying illustration contributed by Mr. Murray. § No. 416. || No 441. ¶ No. 436.

FROM KUGLER'S HANDBOOK OF PAINTING.

KING CHARLES THE FIRST.

By Vandyck. Contributed by Her Majesty, from Windsor Castle to the Manchester Exhibition. No. 736 of the Catalogue.

FROM KUGLER'S HANDBOOK OF PAINTING.



THE TESTAMENT OF EUDAMIDAS.

A Study by Nicholas Poussin. Contributed by the Rev. Thomas Mawkes to the Manchester Exhibition.
No. 588 of the Catalogue.

FROM MARKHAM'S HISTORY OF ENGLAND.

PORTRAIT OF RICHARD THE SECOND.

From the Jerusalem Chamber. Contributed to the Manchester Exhibition by the Dean and Chapter of Westminster. No. 15 of the Portrait Gallery.

the names both of their painters and possessors: memory or a reference to the catalogue must supply the rest. Ruysdael, Hobbema, Cuyp, de Koning, Wynants, Van der Velde, Backhuysen, and Van der Heyden. The contributors were Her Majesty, the Duke of Bedford, Worcester College, Lord Hatherton, Lord Overstone, Mr. Holford, and Mr. Henry Hope. No collection in Europe can display superior pictures by the masters than Ruysdael's Bentheim Castle * and Forest Scene from Worcester College, Oxford; † or the two Hobbemas, belonging respectively to Lord Hatherton ‡ and Mr. Holford § The Cuyps also were superlatively excellent.

Of the French school, after Janet, the most important masters at Manchester were Nicholas Poussin, with his cold classicalities, and Philippe de Champagne, so sternly true to nature. By the former must be remembered the Triumph of Bacchus, a superb specimen contributed by the Earl of Carlisle from Castle Howard; and a rough sketch of his famous composition, "the Testament of Eudamidas,"|| which is now more particularly mentioned since the original picture is supposed to have been lost, and this even may serve to afford some clue to it. (See the Plate, from the engraving by Pesne from the original, and printed by Mr. Murray's permission, to accompany these pages). Not one picture by Le Seur graced the Exhibition. His works indeed are rare; but if the pictures, at one time proffered by Lord Methuen, had not been withdrawn, a very fine specimen might have been displayed.

The Portrait Gallery was an excellent scheme, devised and conducted entirely by Mr. Peter Cunningham. It commenced with the earliest procurable portraits of our sovereigns, although unfortunately with none anterior to Richard II. But the celebrated Jerusalem Chamber Portrait,¶ once in the south transept of Westminster Abbey, formed a noble beginning. Henry VIII and his descendants were naturally to be seen in extenso. A portrait of Edward VI. as a child with a rattle, by Holbein,*[2] a half-length of Jane Seymour, and a whole-length of Catharine Parr, contributed respectively by Lord Yarborough, the Duke of Bedford and Lord Denbigh were especially note-worthy. So likewise the small picture on canvas from

* No. 708. † No. 711. ‡ No. 722. § No. 767. || No. 588.
¶ No. 15 of the Portrait Gallery. See the accompanying wood-cut drawn by G. Scharf, Jun., from the original at Westminster, for Mrs. Markham's History of England, contributed by Mr. Murray. *[2] Engraved by Hollar.

Sherbourne Castle, engraved by Vertue, representing Queen Elizabeth and Court on her journey to Hunsdon House.* The Morton portrait of Mary Queen of Scots was unfortunately not there, but the Duke of Portland contributed a most valuable full-length of her which was very similar in point of personal appearance to the Morton picture and her monument in Westminster Abbey.

We must pass Essex and Sir Christopher Hatton, Raleigh with the map of Cadiz behind him, Lord Burleigh on his mule, and, pausing a moment before the Chandos portrait of Shakspeare, remark that, although now so totally faded and worn out, that canvas possesses a longer and better supported history than any other of the so-called Shakspeares in existence. It is particularly interesting as the actual commencement of the National Portrait Gallery originated by Earl Stanhope.† A very curious full-length picture of Queen Elizabeth standing on a map of England, with the City of Oxford *between her feet*, is a singular performance and very characteristic both of the style and conceits of the period when it was painted. James I was only represented by a small full length (and they are very rare) from the Earl of Denbigh's. Buckingham was several times represented, but once in particular in an oval from Apethorpe.‡ Of Charles I, numerous repetitions were to be seen, especially the large family group belonging to the Duke of Richmond, once in the Orleans gallery, and a duplicate also of the picture at Windsor Castle. A magnificent specimen of Dobson, the successor of Van Dyck, belonging to the Duke of Northumberland, represents the artist himself grouped with Sir B. Gerbier and Sir Charles Cotterel. The Earl of Craven sent some fine pictures of the Palatine family, and the Earl of Clarendon a magnificent full length portrait of Monmouth. Great painters and great subjects from this period become too extensive for any special enumeration. It is, however, worthy of note, that the series included even men of our own century, many still living; and that Mr. Murray contributed largely from his gallery of literary celebrities in Albemarle street. Dance, Copley and Hogarth appeared to great advantage in portraiture; witness especially, the Captain Coram by the latter. Lely, Kneller and Honthorst had also contributed largely

* No. 64 of the Portrait Gallery. See the accompanying wood-engraving drawn by G. Scharf, Jun., and contributed also by Mr. Murray.

† When Earl Stanhope first proposed in the House of Lords the establishment of a National Gallery of Portraits, the late Earl of Ellesmere offered at once to contribute this picture, which he had recently purchased from the Stowe collection. ‡ No. 98.

FROM MARKHAM'S HISTORY OF ENGLAND.

QUEEN ELIZABETH'S PROGRESS TO HUNSDON HOUSE.

Painted by Mark Garrard. Contributed to the Manchester Exhibition by Lord Digby, from Sherborne Castle, Dorsetshire. No 64 of the Portrait Gallery.

by their works to perpetuate the beauty and fashion of the beauties of their day. Thornhill was only represented by one picture, and that a very fine and touching portrait of Sir Isaac Newton in his old age.

English Art commenced therefore at the upper end of the northern range of galleries devoted to modern paintings, starting from the eastern extremity of saloon D. The earliest and very old fashioned names of Dahl, Aikman, Jervas, Vanderbank, Wooton, Richardson, Hudson, Ramsey, and Hayman deserve mention, because *well authenticated*, signed and dated pictures retained by the families for which they were painted were to be seen here, and afforded the most valuable guides to those who might desire to note artistic ability and styles to the greatest advantage. Hogarth, whose name recalls very different associations, showed also with great power. His admirable portrait of Captain Coram* has been already mentioned. His Sigismunda,† contributed by Mr. Anderdon, was an instance both of the false taste and criticism of the day and of the artist's misapprehension of his own powers. There was no specimen of his series of moral paintings such as may be seen in the National Gallery and Sir John Soane's Museum; but the pictures of Southwark fair,‡ the march to Finchley,§ and a scene from the Beggars' Opera as first performed in 1729,|| belonging respectively to the Duke of Newcastle, the Foundling Hospital and Mr. Murray of Albemarle street, exhibited to a great extent the fashion and manners of the day under the painter's fullest powers of satiric portraiture. Wright of Derby claims recognition for the truthfulness of his portraits, and few indeed could be pointed out of greater interest than the picture of Rousseau by candle-light¶ when staying at Wotton in Derbyshire, now the property of Sir John Boileau. Wright's later fancy of painting fire-light subjects was extensively illustrated by Lord Overstone's grand picture of the siege of Gibraltar.*[2] Wilson, in his rich blue calm scenes charmed to a great extent. His Niobe,†[2] contributed by Mr. Wynn Ellis, the Vale of Llangollen,‡[2] belonging to Mr. E. Lloyd, and a landscape§[2] painted for John Hunter, now treasured by Mr. W. Entwisle, were certainly among the most pleasing. Wilson also appeared as a portrait painter in one picture contributed by the Royal Academy.||[2] Gainsborough burst upon

* No. 30 of the Modern Masters. † No. 21. ‡ No. 31. § No. 26. || No. 25.
¶ No. 84 A. *[2] No. 81. †[2] No. 32. ‡[2] No. 38. §[2] No. 41. ||[2] No. 167.

the world by means of this exhibition in quite a new phase. Hitherto the public generally had only known him as a painter of rich and bold landscapes. Here he rose in figure painting to such an extent as fairly to divide the palm of attraction with Sir Joshua Reynolds. His Blue Boy,* long known to artists as the practical result of a frequently repeated anecdote, held the post of honour in these northern galleries correspondent with that of the Windsor King Charles on horseback among the ancient pictures. Lord Westminster did indeed render a great service to art by permitting this fine work to grace the Exhibition. Scarcely less gracious was the contribution by Mr. Graham, of the full length portrait of Lady Lynedoch,† which formed the pendant to Sir Joshua Reynolds's Mrs. Pelham feeding chickens‡ belonging to Lord Yarborough. Gainsborough's portrait also of Mrs. Siddons§ when very young, possessed of course a strong double interest. Had Lord Westminster also bestowed on the Manchester Exhibition Sir Joshua's sublime work of Mrs. Siddons as the tragic muse, he would have established a fair balance in favour of Reynolds compared with the "blue boy." His Lordship is certainly fortunate in being the holder of two of the very finest pictures England can boast by these masters. And before passing entirely away from the works of Gainsborough, I may be pardoned for quoting the remark made to me by a foreigner of very high rank and deeply versed in the study of pictures generally, because it may serve to illustrate one at least of the impressions conveyed abroad by the late exhibition; "we have seen to-day that you possess in England a portrait painter well deserving to rank with Reynolds, and whom, hitherto, we have only known on the continent as a landscape painter—Gainsborough." Of the Sir Joshuas both on these walls and in the Portrait Gallery, it is impossible to offer any particular selection; suffice it to say, that besides those already named, Lord Spencer, the Marquess of Hertford, the Royal Academy and Mr. Tollemache contributed the finest specimens. Copley again was an artist little known to the generality of picture-viewers. His death of Chatham in the National Gallery has, it is true, long been exhibited to the public; but at first sight it is an unattractive picture, and seems merely to present a mass of heads. At Manchester his picture of the Death of Major Pierson,‖ contributed by his son Lord Lyndhurst, held a very high position; so, likewise, did an

* No. 156. † No. 157. ‡ No. 155. § No. 74. ‖ No. 112.

"Incident in the Life of Sir Brook Watson," from Christ's Hospital. It was inconveniently attractive, since being placed near the turn of a narrow and much frequented staircase, throngs of persons collected to gaze at the man and the shark as well as to read an unusually long description on the frame before passing on. It is a picture that most undoubtedly merited an important position in saloon D. A picture of the Tribute Money,* also by Copley, was less original and satisfactory, but notwithstanding good and very superior when compared with similar imitations of the old masters by President West, whose two pictures of the Death of General Wolfe† and the Battle of La Hogue,‡ contributed by Her Majesty from Hampton Court and by the Marquess of Westminster from Grosvenor House, were of superior merit and displayed indeed no small affinity to those of Copley already specified.

Romney, great especially in portraiture, may be advantageously remembered, by a charming picture§ of the thirteenth Earl of Derby and his Sister, contributed by the Earl of Derby; a portrait of Lady Broughton,|| a full length belonging to Sir Philip Egerton, the most mellow and beautiful picture I remember from his hands, and of Lady Hamilton, Romney's especial study and "Goddess of Beauty," contributed by Lord De Tabley. Of other eminent artists of the *old school* it is impossible to do more than name Zoffany, Fuseli, Loutherbourg, Stubs, Morland, and Northcote.

Barry, however, claims a special exception, since his struggles for historic art in the days of Reynolds and Gainsborough are well known, and his pictures still remain comparatively difficult of public inspection. His immense pictures in the assembly room of the Society of Arts in the Adelphi, London, are perhaps more celebrated on account of the circumstances under which they were produced, than for any especial amount of artistic merit which they possess. They are notwithstanding fine works, the evidence of an original spirit, and may be regarded as the first heavings of a mind that led the way to artistic liberty and independence. Those who have turned over the pages of Barry's life, will remember to have frequently met with allusions to his great picture of Pandora. It disappeared, and has but recently emerged from comparative obscurity, being now the property of the Manchester Royal Institution, by whom the picture ¶ was deposited among the Treasures of Art collected at Old Trafford. Artists of the suc-

* No. 108. † No. 115. ‡ No. 109. § No. 125. || No. 77. ¶ No. 158.

ceeding age, Lawrence, Harlowe, Bird, Owen, Raeburn, Stothard, Daniel, Nasmyth, Smirke and Westall, were clearly recognizable by their peculiarities ; and their successors again, now alas, also taken away from us, Bonnington, Etty, Calcott, Wilkie, Turner, Collins, Constable, Newton, and Müller, were never seen to greater advantage than by these *selected*, and, it may also be said, *time-tested* pictures placed in good light and impartial relation to each other.

Haydon, one of this period, although apart from his contemporaries in many respects, afforded several examples of his dashing efforts to regenerate what he considered high art. His great picture of Macbeth, No. 241, so often mentioned in his autobiography, and one which reflects so much credit on that excellent amateur painter and true patron of art, Sir George Beaumont, occupied a very prominent place ; but his no less immense picture of the Judgment of Solomon, No. 280, now the property of Sir Edwin Landseer, is far more favourable to his professional reputation. His smaller picture of Æneas and Anchises, No. 303, contributed by the Rev. Frederick Leicester, was also a very favourable, and at the same time characteristic, example of his powers. The Mock Election, contributed by Her Majesty the Queen, No. 421, exhibited a singular combination of the spirit of the day with Haydon's personal situation, and served to shew that had he bestowed time and care on such subjects, he might have become a very genial painter of ordinary human nature under a humourous aspect.

The Royal Academy of Arts, it must be acknowledged, contributed most essentially to the success of the range of modern art, by consenting to the display of all their diploma pictures from the period of the foundation of the Academy.

As every artist and sculptor, on being elected an Academician, is required to deposit a picture or work of art by his own hand in the council room, a very important series has been formed. Many of the finest English pictures and sculptures at Manchester, of the earlier times, were derived from this source.

Foreign modern art was not extensively illustrated : a few excellent works, however, by Ary Scheffer, De Keyser, and Overbeck, were to be seen, but a much more extensive series was indeed a desirable point in the Exhibition : nor was the locality assigned them deemed sufficiently honourable.

Saloon F was devoted exclusively to the finest paintings of living artists, and it is not too much to say that *here*, of all parts of the exhibition, was to be seen the most unalloyed enjoyment on the part of the general visitors. Sir Charles Eastlake, Sir Watson Gordon, Sir Edwin Landseer, Stanfield, Danby, Webster, Leslie, Linnell, jun., Grant, Lee, Creswick, Mrs. Carpenter, Elmore, Bright, Maclise, Egg, Roberts, Frith, Dyce, Ward, Herbert, jun., Goodall, H. Hunt, Millais, Lance and Ansdel, certainly held the foremost places, and great pleasure seems to have been excited in the numerous opportunities which these collections afforded the visitor of renewing acquaintance with favourite pictures long since remembered at our London Annual Exhibitions. This indeed may be regarded as the only exhibition of modern art, free from pictures executed *expressly* for it. Time and the artist's own matured opinion, combined with the impartial opinion of those who formed the local executive committee, had a most powerful effect in producing these good results. On Foreigners especially the impression sank deepest, and those who came and went expressed the fullest conviction that England not merely now possesses a high and independent school of art, but that one has long existed, which nothing but national prejudice and want of fair display have kept so densely concealed.

In two instances the Committee of the Exhibition deemed it advisable to keep certain contributions or "properties" (as the sale catalogues would say) distinct from the rest. The Marquess of Hertford stipulated expressly that his forty-four fine pictures should be kept together, and they were accordingly assembled on the northern side of the large square apartment called Saloon H, the remaining walls of which were occupied with a collection of the choicest Dutch cabinet pictures from various contributors. The Soulages collection was also studiously kept together, for the purpose apparently of enabling the public to judge of its extent and independent value.

From modern art and painting generally, we pass to the Gallery of Original Drawings and Engravings, a kindred department, and still pictorial, although, in consequence of the absence of colour, less attractive. Unfortunately the amount of treasures accumulated there was little understood by the crowd of vistors who daily swept by them at the time the music was about to commence.

Of all departments this most especially required placarded directions and written explanations. On the present occasion, only a few, of course, of the most leading features, whether for merit or rarity, can be specified.

The collection of original drawings—the first rough indications of the conception of many of the finest pictures in the world; for such was the only form in which the artists could note down their rapidly passing thoughts—were left in almost total disregard. The library of Christ-Church, Oxford, contributed some of its choicest original sketches by Raphael and Leonardo Da Vinci: Sir John Hippesley, also, sent superb studies by Raphael and Giorgione, whilst Mr. Ford enriched the series with Spanish drawings by Murillo and Alonzo Cano, and three studies of considerable importance by Parmigianino. But the gems of Dr. Wellesley's collections at Oxford imparted the chief glories to this department. From his exhaustless stores he poured out an historic series of original drawings by early and late masters, and exposed to view a mass of sketches by Titian and Claude, hardly to be matched in the rest of the world. The Claude drawings are far superior to the sketches forming the celebrated "Liber "veritatis" belonging to the Duke of Devonshire, inasmuch as these are careful studies made preparatory to painting his pictures, and those in the "Liber "veritatis" were hurried transcripts taken, sometimes at the last moment, with the mere object of preserving a rough record of the composition as the picture was about to leave his hands. The drawings by Canaletto were also bold and vigorous in the extreme, and served to afford many curious illustrations of ancient Venetian topography. Dr. Wellesley's early Italian drawings comprized one of special interest, the first thought, by Ghirlandajo, for his celebrated fresco in Santa Maria Novella at Florence, the "Birth of the Virgin," in which possibly his pupil Michael Angelo rendered him assistance. Early sketches by Raphael and Perugino contrasted remarkably with the dashing pen and ink style of Donatello and the majesty of Buonarroti, of whom there were many examples; but two or three drawings by Raphael, once in the Rogers collection, contributed by Mr. Birchall, and a sketch of "Boys at Play," from Oxford, exhibited Raphael in all his mastery. A small cartoon exquisitely finished in bistre, by Gaudenzio Ferrari, and the property of Dr. Wellesley, formed a friendly link between the sketch-book, leaf-size of the above-named, and the large scale of the working cartoons, fresco-size, ranged above them. Fragments of some of Raphael's cartoons

which, unlike the seven now at Hampton Court, had been torn to pieces, were contributed from Christ Church, Oxford, and Althorp in Northamptonshire. A selection also of some very fine large cartoons, with figures of boys of stupendous size, by Correggio, for some of his cupola frescoes at Parma, exhibited wonderful power united with delicacy. They belonged to Mr. Hertz, whose name has been for many years familiar to lovers of art; but more especially for his collections of antiquities. An immense cartoon, one half in fact of the central compartment, by Annibale Caracci, on the ceiling of the Farnese palace at Rome, was hung on the wall of the principal hall near the southern ascent to the clock gallery. This extensive mass of paper (corresponding in scale of the figures to those on the cartoons presented by the late Lord Ellesmere to the National Gallery), was actually used to trace the painter's outline on to the mortar, and was peculiarly adapted to render detailed information to those who desired to study minutely Caracci's technicalities. This important work of art was liberally entrusted to the Exhibition from Marbury hall, by the late Mr. Smith Barry, who had been indeed the first to recognise in it the composition of Annibal Caracci. Until that period the cartoon had always been spoken of as a work by Raphael.

Some very spirited and poetical designs in black chalk by Romney, from the Liverpool Royal Institution, displayed extraordinary power; and a wild design of Fuseli, and a vigorous but mannered composition by Gibson, were deposited also by the same proprietors.

It is now high time to pass in mind through the narrow spaces enclosed in walls of engravings, which were ranged, as nearly as possessorship seemed to allow, in chronological order.

When it was first determined to form a Special Gallery of Engravings, the subject was referred to Mr. William Smith, late of Lisle Street, whose extensive knowledge of engravings and influence with various holders in private collections were well known, and to Mr. Dominic Colnaghi, who had already prepared for his own gratification a large and instructive series of the works of the leading engravers from the very commencement, and who ultimately took a very prominent part both in forming the collection and inducing holders of the rarest gems to support it.

The origin of printing from the practice of engraving on metal plates is by this time very generally known. As long as engraving on

metal was the *final* object, the hollowed lines graved into the metal were filled in with a black substance so as to make the workmanship more distinct and more permanent also. The first impressions were taken by the engraver, not of the engraving in printing ink only, but of the entire plate, as from a seal, in plaster or melted sulphur. A counter impression having been taken, the corresponding hollow lines were blacked in, and this *duplicate* was retained by the workman as a fac-simile and specimen of his ability. Sulphur impressions of this nature are indeed rare: only a few are in the British Museum; whilst at Manchester not one was to be seen. Delicate rubbings with printing ink on soft paper seem occasionally to have been taken from some of these sulphurs, and others also from the engraved plate before it was finally filled in with the black metallic substance called *Niello*. Plates so finished were called Nielli, and they are frequently mentioned in Vasari's account of Maso Finiguerra the goldsmith, and others who made the first discoveries in multiplication of designs by printing from engraved plates. In the Museum at Florence is preserved a silver niello plate, called a Pax, engraved with the device of "the coronation of the virgin." In the British Museum is the sulphur duplicate from it, which had, during progress, been taken and filled in with paint *before* the Florentine one had received the metallic black; and in the Louvre is a paper impression taken between the two operations when the metal had somewhat more engraving on it than the sulphur exhibits. Each different museum thus affords a distinct illustration of the process, and serves to confirm a passage of Vasari, who mentions this very Pax. It was paid for, according to the still existing church accounts, A.D. 1452.

There were at Manchester several delicate impressions taken from silver plates destined to receive niello; and these nielli prints, *Proofs* they might truly be called, were attributable to Finiguerra, and are of the utmost rarity. Mr. R. S. Holford is the fortunate possessor of these priceless treasures; but in their frames in the gallery they appeared no more than small grey specks upon a broad sheet of white paper. Among them the most beautiful was an Adoration of the Magi, surrounded by smaller medallions and an impression from the "Coronation of the Virgin" on the Florentine Pax above alluded to.

These silver plates were succeeded by engravings on copper by some of the first essayists who worked upon the metal, for the taking of impressions

FROM GUIZOT'S FINE ARTS.

Translated by George Grove.

THE FIVE SAINTS.

From an Engraving by Marc Antonio, after a design by **Raphael**.

now became the express aim and end of their labours. Baldini and Botticelli, already distinguished painters, devoted themselves readily to the new process. Baldini's series of engravings of the Triumphs of Petrarch, of the utmost rarity, were contributed by Dr. Wellesley, Mr. Palgrave, and Messrs. Evans; and by the same artist was to be seen an extraordinary engraving of the Preaching of the Fra Marco, indicating the foundation of the Mont de Piété, and an engraving of Christ from the "Monte Sancto di Dio," dated 1477, and the first engraving ever used as a book-illustration. These rare works are the property of Dr. Wellesley and Mr. E. Cheney. The great Italian masters Pollajuolo, Andrea Mantegna, and Mocetto were seen at Manchester in full vigour; and the series of Marc Antonio, Bonasone, and the Mantuani were almost unrivalled. Of Marc Antonio, whom Raphael especially employed, even surrendering one of his own workmen for his especial assistance, the productions were of uniformly first-rate excellence and too numerous to admit of anything like particular enumeration. Perhaps, however, the very finest, clearest, and rarest of all these superlative brilliances were "The Judgment of Paris," belonging to Professor Johnson of Oxford; "Peace," Dr. Wellesley; "The Pest," Mr. Holford; "Aretino," Mr. Cheney; "The Five Saints," * Mr. Holford; "Massacre "of the Innocents," Mr. H. Hawkins; "The Martyrdom of St. Lawrence," Mr. H. Hawkins. All these were either unfinished proofs in rare states or unique condition. Bonasone was almost as peculiarly the engraver from Michael Angelo, as Marc Antonio was from Raphael. For the superiority of this collection, the principal thanks were due to Mr. Hawkins, of Bignor, Dr. Wellesley, the Rev. J. Griffiths, Mr. Holford, Mr. George Smith and Mr. St. John Dent.

Among the engravings by early Germans, Martin Schön, Israel van Meckenen, Lucas van Leyden and Albert Dürer, were most prominent. Here the aid of Mr. R. Fisher, Mr. C. S. Bale and Mr. Felix Slade was of especial value.

Rare historical engravings belonging to our own country naturally commanded a greater interest. Queen Elizabeth, in the dress in which she went to St. Paul's, James I. and the Prince of Wales, Anne of Denmark,

* See the accompanying engraving, from Marc Antonio's "Five Saints," drawn by G. Scharf, and contributed by Messrs. Bosworth and Harrison from "Guizot's Fine Arts."

all by De Pass; Goltzius's fine engraving of the boy Frisius and his Dog; Elstrack's Mary Queen of Scots and Darnley; Delft's Elizabeth of Bohemia; Faithorne's engravings of the period of Charles II., especially an early map of London dated 1658, contributed by Messrs. Evans of the Strand. An unparalleled series of Hollars and Nanteuil's brilliant performances, including John Evelyn and other portraits, occupied their respective places among etchings and engravings.

Strange, Woollett and Sharp, engravers in whom the English feel a just pride, were worthily displayed at Manchester in works from Titian, Guido, Claude and Wilson. The principal contributor of these works was Mr. Felix Slade. Raphael, Morghen, Müller, Longhi, Desnoyers and Anderloni, verging on modern times, are the last who can be enumerated. Of Volpato I observed no specimen.

Rubens, like Raphael, created a school of engravers, of whom the most prominent were Vorsterman, Bolswert, van Thulden, Pontius, and Soutman. Poussin, likewise, had his followers in engraving, of whom Audran and Pesne were the first and most characteristic. Wille also deserves particular remembrance for his fine and brilliant paintings by the Dutch masters. The chief part of this extensive series was contributed by Mr. Lewis Loyd.

Another branch of engraving, of nearly equal importance and more closely allied in fact to typography, is wood engraving. The art of engraving blocks of wood, for the purpose of yielding impressions, was coeval with the invention of chalcography. A few pages from the early block-books, and some primitive playing cards marked the infancy of the art. The famous 1423 wood-cut, however, of St. Christopher, (the earliest known with a date), belonging to Lord Spencer, was not exhibited. An extensive series of wood-cuts, giving the effect of original coloured drawings by means of impressions of several wood-blocks, invented by Ugo da Carpi, were there: many of them representing Raphael's cartoons and other well known compositions. Designs also by Titian were recorded through this process by AndreaniVavasori and Scholari. No. 1389, (numbered 50 on the frame), was a magnificent Procession after Titian, emblematical of the triumph of the church. The "Orpheus" by Pilgrim, the supposed inventor of these chiaroscuro printings, was also there, but it bears no date. Some striking life-size portraits in black and white, looking like pen and ink drawings, were remarkable from their truthfulness and

vigour, especially the bold profile of the Sultan Solyman with au unusually tall cap encircled by four crowns, and a large medallion portrait of Pope Julius II. by Burgkmayer. A great map of Venice, dated 1500, attributed to Albert Dürer, but more probably by an Italian artist, is often referred to as an authority on topographical matters.

Albert Dürer, equally great in wood engraving as in etching and all other branches of design, was represented by many examples in the first department. On this occasion it is only possible to name the colossal head of Christ; complete sets of the Apocalypse; the Life of the Virgin; the Passion, and the Triumphal Car of the Emperor Charles V, executed by Burgkmayer. The Triumphal Arch of Maximilian, dated 1515, was composed of a great number of separate plates admirably joined by Messrs. Colnaghi for this express occasion. Here again, and in all the instances above specified, Mr. William Russell was the liberal contributor. Holbein's dance of Death, a fine series contributed by Mr. Fisher, and the Maze were not such novelties, as far as subjects are concerned, on account of the numerous and cheap copies disseminated to the less experienced students of this branch of art. These impressions, however, were in remarkably fine states. The influence again of Rubens upon wood engraving was to be seen in Jegher's bold engraving of the Garden of Love.

Early attempts at printing in natural colours should not be passed over. They were made by Kirkhall of Sheffield, who flourished in the first half of the eighteenth century. Mr. William Russell and Mr. Cheyney exhibited specimens of his art. Bewick, Linton, Thomson and Orrin Smith are the best known modern names, and their works were well and numerously represented.

The greater part of the exquisite modern engravings, including French, German and Italian, contributed by Mr. Lewis Loyd, the Duke of Portland and Mr. Felix Slade were deposited in the southern galleries. Near the miniatures and enamels towards the gallery steps were arranged a cluster of the earliest mezzotinto engravings. The very first of these, by Colonel Furstenburgh, Count van Siegen and Prince Rupert, variously dated from 1643, are wonderful indeed as first attempts. Van Siegen's engraving was taken from a painting by Honthorst.

Etching, on a bold, large scale, was practised by many of the great masters, both of their own designs and from admired pictures by others.

In this style Albert Dürer, Agostino Caracci, Rembrandt and Van Dyck were preeminent.

Among Rembrandt's own etchings, which according to their various states command such an extensive range of prices, the following deserve special enumeration :—

The Sabre Print in three states, and after the plate was cut; Rembrandt himself in a turned-up hat; the hundred guilder piece of Christ healing the sick; the Shell in first and second states; Van Tolling, Old Haaring, Renier Anslo, Ephraim Bonus, the Gold-weigher (in four states), Coppenol, The Burgomaster, Six; the Gold weigher's field; the Three Trees, the Ecce Homo, and Rembrandt's Mill, dated 1641. Of all these the greatest part and the very finest belonged to the Duke of Buccleuch. The rest were contributed by Mr. Holford, Sir C. Price, Mr. Fisher, Mr. Smith, and Mr. Brodhurst. A unique proof of Waverus etched by Van Dyck was contributed by Mr. S. C. Bale.

Other etchings by Ostade, Paul Potter, Berghem, Rosa da Tivoli, Claude and all the illustrious Dutch painters of that period were displayed in profusion. On the opposite wall, near the stairs,—in continuation, it may be said, of the earliest attempts at mezzotint,—was an unrivalled series of large engravings in the same process from the most effective pictures by Sir Joshua Reynolds. Here indeed the wonderful variety and originality of the great painter were most strikingly to be seen. All his largest, finest full-length compositions were collected here in the full brilliancy of artist's proofs. For this treat again the public were indebted to the Duke of Buccleuch. The principal engravers in this series were T. Watson, Hodges, Dunkarton, Dixon, Dickenson, M'Ardel, J. Raphael Smith, V. Green, Doughty and Ward. In the same process, but varied to an incredible extent, was also to be seen a large series of plates, (many of them the same subject in various states,) frequently worked upon experimentally by the artist's own hand, printed in deep brown colour, and forming the plates to Turner's Liber Studiorum. As they lined the screens on that side of the gallery which the music-listeners frequented, they obtained but little notice. In the same gallery, but more directly under the large southern window, was an extensive and interesting display of printing in colours, architectural drawings, &c. The latter included several antiquarian restorations of deep research, and admirably coloured

views of foreign architecture, which not only merited but required some special explanation. None, however, was afforded in the catalogue.

These coloured drawings lead us naturally down into the galleries at the extreme western end of the building which were devoted expressly to water colour. In decending the steps, however, the eye was arrested by a large number of photographic portraits of celebrities, and a collection of lithographic prints, a process which certainly deserved a somewhat more extensive illustration than it obtained among the Art Treasures. Of all processes of printing and engraving, the use of stone is the most recent, unless, indeed, we except the vague and at present undefined attempts that are being made with regard to printing from plates by photography. Mr. R. Lane, the eminent lithographer, contributed a collection of the first attempts at lithography in England; one, a landscape, was signed 1804, and another "R. Hill, 1807." Sennefelder, a German of Bavaria, was the original inventor of the process, and lived to see it carried to wonderful perfection.

Entering now, in mind, the long and principal gallery of water colour art, we remember especially John Lewis's magnificent pictures of the "People at Rome, assembled to receive the Papal Blessing," and the "Englishman encamped in the neighbourhood of Mount Sinai;" "Roberts's "views in the Holy Land;" Cattermole's rich and romantic subjects; Carl Haag's refined renderings of rustic figures; Louis Haghe's daylight and real representations of foreign scenes and living people among them; Cromek's Italian atmosphere; Cox's pure air and mountain scenery; Hunt's matter-of-fact, but unrefined, pourtrayal of rude simplicity; Edward Corbould's theatrically artificial scenes; Nash's rich and historically architectural records; Collingwood Smith's manual facility of colour; S. Cooper's truthfulness in cattle; Tayler's richness and power of grouping; Topham with corresponding power in subjects of a ruder class; Clarkson Stanfield's fresh air subjects, but always most genial when in the neighbourhood of the sea. These are only a very few of the abundant and purely English excellencies which covered the walls of this spacious hall. But out of this main hall again branched three smaller apartments, each of which was devoted to an especial service, and from which it was hardly possible for any one to emerge without deriving a much more exalted notion of the power, stability and extent of our water colour practice. The first room traced the art back to its comparative infancy in the low countries. As a foundation of this valuable historical series, Mr. William Smith placed at

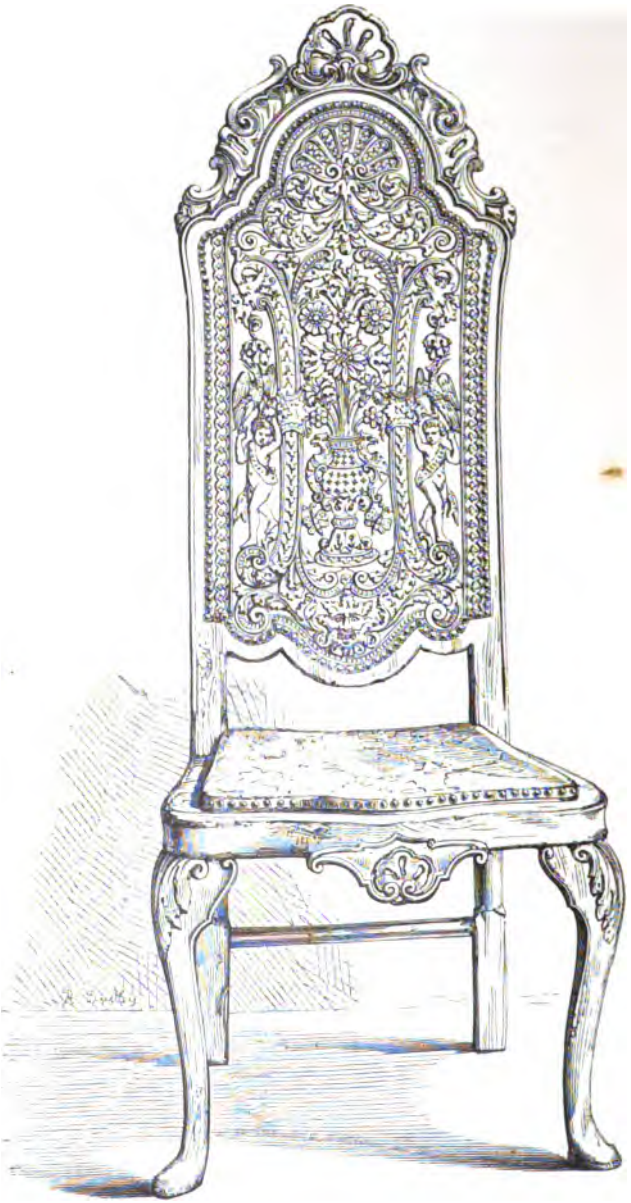
the service of the committee his rich collection of water-colour drawings, which he had formed and always intended to illustrate the growth of the art from the earliest times, and, in addition to this, a numerous list of collectors sent abundant support. Among these the most liberal were Her Majesty the Queen, The Royal Academy, The Dowager Lady Ellesmere, Mr. William Russell, Mr. John Henderson, Mr. Henry Cheney, Mr. John Pender, Mr. William Sandby, Mr. Thomas Birchall and Mr. T. Griffiths.

Solid *opaque* water colour painting, called *tempera*, or distemper painting, had been long in use; but *transparent* colouring, to be modified by the addition of water only, was comparatively an innovation. Transparent tints laid on with this medium had been used to gratify the commonalty, to enrich the earliest woodcuts in the pages of the block books, playing-cards, and various ecclesiastic devices. In the most beautiful of the Flemish miniatures, these transparent colours were employed to shade and heighten the brilliancy of folds and features, after having been first laid in with a more opaque and solid paint, namely, the tempera. As far back as the 16th century, Albert Dürer appears to have employed transparent colours for tinting large surfaces. Several of his works were on parchment; but the first and most decided instances of the use of water colours on paper were shewn in the works of Ostade, Rembrandt, Jordaens, Van Huysum, and Watteau. Our earliest water-colour artists, Paul Sandby, Cozens and Girtin were truly giants, and from their hands many of the finest conceivable compositions were to be seen. And these were followed by an extensive series, all in the same process, enriched and varied by the genius of Gainsborough, Cipriani, Reynolds, Rowlandson, Heaphy, Clennel, Edridge, Blake, Stothard, Flaxman, Barrett, Varley, Dewint, Prout, Martin, Constable, Copley Fielding, Chambers and Wright.

In the second room Turner predominated, and it was here, by comparing his very earliest with his very latest drawings, that a useful lesson might be derived. The range of his views and the changes of aspect in his various scenes were wonderful, and one could only regret, when contemplating his latter and most gaudy drawings, that he could ever have departed from the strength and propriety of his first transcripts of nature. As architectural draftsmen both he and Cattermole acquired the knowledge and practical foundation of their power. In the third room were to be seen

FROM THE ART TREASURES OF THE UNITED KINGDOM.

Edited by J. B. Waring, Architect.



PRESSED LEATHER CHAIR, OF THE EIGHTEENTH CENTURY.

Exhibited by F. Leake, Esq.

admirable studies from nature, drawn to perfection in coloured chalks, by Mulready; sketches in Turkey, of a very flimsy nature, by Sir David Wilkie; graceful and delicate compositions, by Flaxman and Stothard, by the former of whom also a few bold pen and ink drawings from the life, belonging to the Royal Academy, deserve especial record. A great number also of sketches made abroad in Egypt and Asia Minor by Müller were of an excellence and interest that claimed far better treatment than they received in the dark position assigned to them near the ground on the screens, since they afforded far more truthful records than either Wilkie's vague hints or the pretending, overloaded and opaque scenes, by the chevalier Hildebrandt taken in similar regions.

The course from these galleries led through the Indian court, which although limited in comparison with the corresponding Department of the Hyde Park Exhibition, excited great admiration, and seems on the whole to have been as generally popular with the manufacturing classes, as any other portion of the treasures amassed for their gratification. The tent in the centre of the room contained superb specimens of furniture, bolsters, saddles, chess-tables, embroideries, turbans, horse-trappings and various kinds of Damascened armour. In cases around the tent were magnificent examples of Turkish arms, pipes, stools and boxes, chiefly contributed by Her Majesty the Queen and the East India Museum. Chinese work, ivory carvings and highly wrought bowls, together with the most beautifully patterned Indian shawls, were sure in themselves alone to elicit admiration; but many objects in the general museum which occupied the remaining available extent of the great nave, required the adventitious aid of labelling and historic explanation, all of which was effected and most admirably arranged, by Mr. J. B. Waring. In the central nave, the necessity of some general classification became at once evident, and the system adopted by Mr. Waring in this respect was certainly one by which the progress of those who desired to study and examine was very materially facilitated. Gold and silver, glass-work and enamels, book-binding and all other leading branches were kept perfectly distinct. They were arranged in very large cases, and the visitors were thus enabled not only to regulate their ideas and institute comparisons, but the system was of the greatest advantage to those persons who were desirous of finding out any particular object.

Among so many objects of such general interest and so varied a nature,

it may become a matter of some difficulty to recapitulate even a few of the most noteworthy objects or principal curiosities. Those however of chief importance and rarity, as they now pass through my mind, were the fine specimens of Venetian glass, contributed by the Duke of Buccleuch, Mr. Felix Slade and the late Mr. Nicholson; the Saxon lantern from the Ashmolean Museum at Oxford; the famous enamelled cup, from the Corporation of Lynn; the beautiful croziers of William of Wykeham and Bishop Fox; the clock which Henry VIII. presented to Anne Boleyn, contributed by Her Majesty, together with the magnificent shield by Benvenuto Cellini, which occupied an isolated case towards the transept. The silvergilt-mounted Nautilus cup, from Windsor Castle, was also a great celebrity. A superb collection of oriental metal work, both in brass and latten, belonging principally to Mr. Rohde Hawkins, and* Mr. E. Falkener, filled one large case, whilst in another of similar size were assembled some of the finest examples of oriental armour, in weapons, trappings and accoutrements.

In these respects indeed the vast contributions of Colonel Meyrick, from Goodrich Court, stood pre-eminent. The universally known volumes relating to ancient armour, by Sir Samuel Meyrick, the colonel's ancestor, illustrative of the collection he had formed, were always regarded as the chief authority on such matters in this country. The book has been copied and recopied, referred to and quoted from without end, but the original materials, the armour itself, at Goodrich Court, could only be seen by a very considerable effort, and inevitably at very great expense. On this occasion Colonel Meyrick generously rendered it completely accessible. The finest part of his collection, through the admirable management of Mr. Deane, was successfully transferred to the Art Treasures' Exhibition at Manchester, where it was advantageously arranged, and most instructively described by the distinguished authority on these matters, Mr. J. R. Planché, of the Herald's College. In addition to these complete suits of armour, contributed by Colonel Meyrick, a large selection of the choicest specimens were sent by government from the Tower of London, by which means a truly unparalleled series of examples was collected. The Earl of Warwick contributed the earliest helmet, Mr. James, of Aylesbury, an extensive collection of spurs, whilst many other important examples were

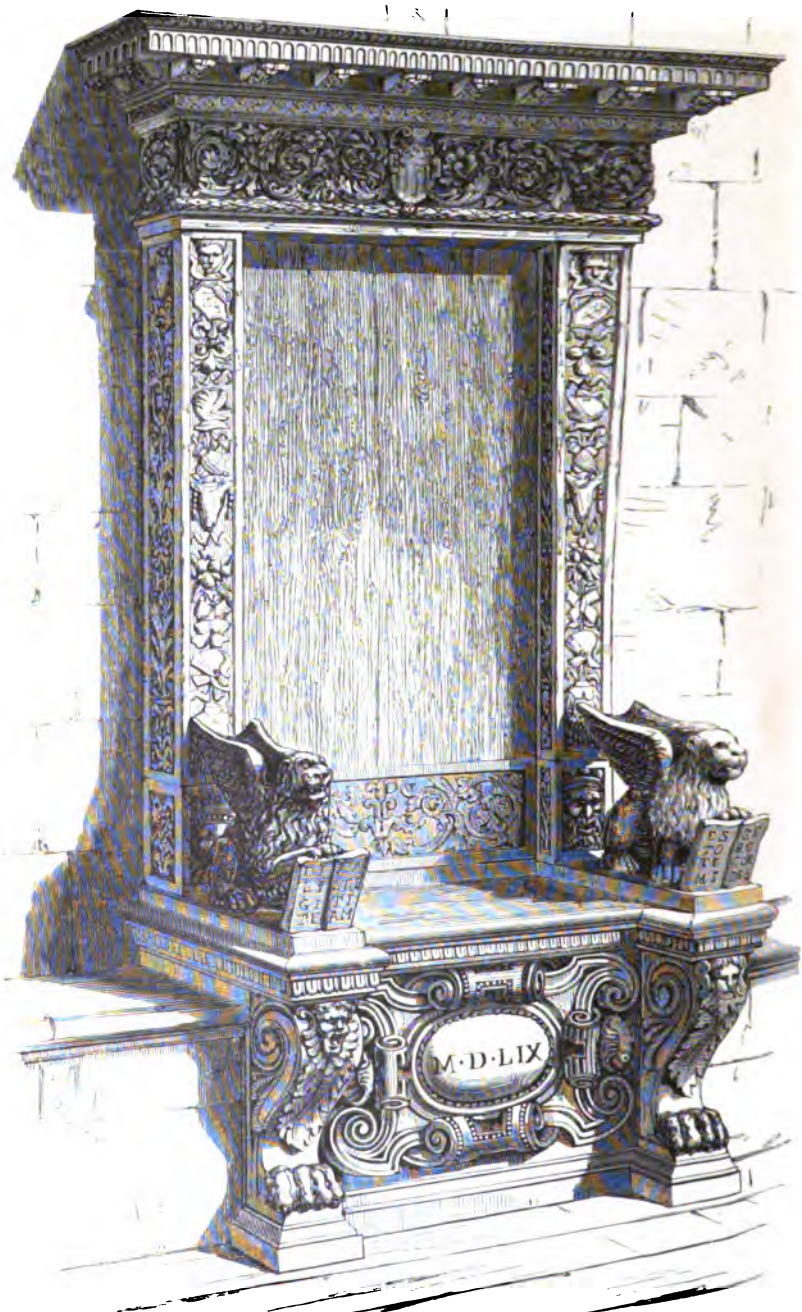
* See the woodcut contributed through the kindness of Messrs. Day.

SILVER FILIGREE RELIQUARY.

Said to have been dug up in the foundations of St. Paul's, London.
Belonging to Lord Hastings.

TURKISH ENAMELLED COPPER EWER AND BASIN.

Purchased by Mr. Edward Falkener, the former at Smyrna, the latter at Constantinople.



CARVED WOODEN THRONE OF A VENETIAN DOGE. DATE 1559.

Delineated by E. Chaney Esq.

afforded by Her Majesty from Windsor Castle, the Marquess of Hastings, and Lord de Lisle. A fine suit of mounted armour belonged to Sir Henry Dymoke, the hereditary champion of England. Superb examples, indeed, were two suits from the tower, one of the time of Henry VI, the other, fluted, dating from the reign of Henry VIII. Two magnificent suits elaborately ornamented, made for Prince Henry, the son of James I, and for Prince Charles his brother, are of special historical importance. A buff coat of Sir Jacob Astley served to confirm the accuracy of this portion of his portrait exhibited in another part of the building.

A superb half suit, surmounted with a temporarily added, highly wrought, Morion, belonging to Alphonso Duke of Ferrara, was considered by Mr. Planché to be one of the finest in Europe; near it stood an original Italian armourer's anvil, the sides of which were elaborately wrought. Between these objects and the nave were two remarkably fine tilting suits, the figures being mounted on horses in the act of encounter. They belonged to the sixteenth century. In a glass case near at hand was the celebrated ivory cross-bow, of the time of Henry VI, and a curious instrument from which our modern dragoons derive their name. It was a primitive gun made of wood, inlaid with ivory and called a *dragon*. There were also several beautifully wrought couteaux de chasse, and in one case a magnificent display of shields, including the targets of Francis I and the Emperor Charles V, the former executed by Negroli, the latter by Pacini. On the opposite side, also in a glass case, were finely embossed shields, contributed by the Marquess of Breadalbane and Lord Delamere. There were also a remarkable two-handed sword, with the two cognizances of De Lisle and Warwick, and a superb partizan with highly-wrought staff, said to be a present from the Pope to Henry VIII: these and a halberd, probably used in ecclesiastical processions, were also deserving of special study for design.

Of primitive times, also, one great rarity, the thin bronze coating of an ancient British shield, found in the river Witham, Linconshire, claims remembrance. The central boss was studded with small pieces of cornelian. Near it were placed two other remarkable objects, namely, circular shields or targets, used by the primitive occupants of our island.

From the armourer to the goldsmith of olden times may be considered an easy transition.

Of rich church plate, especially Chalices, Monstrances, Shrines, Patens, Thuribles, and Candlesticks, the chief contributors were Cardinal Wiseman, Dr. Rock, Colonel Meyrick, Mr. Howard of Corby and Mr. Beresford Hope, M.P.

The Corporation plate was collected from New College, Queen's and Oriel Colleges, Oxford; from Corpus, St. John's and Pembroke Colleges, Cambridge; from the civic authorities of York, Yarmouth, Thetford, Chester, Rochester and Lincoln; also from the London companies of the Goldsmiths, Barber-Surgeons, Clothworkers, Mercers and Carpenters. From among the latter of these was to be seen the cup presented by Samuel Pepys, and mentioned in his diary. A very curious collection of watches served to shew the advances made in mechanical workmanship and the wonderful amount of taste which prevailed at an early period in fabricating the cases to hold them. Enamels also, mainly through the assistance of Mr. Danby Seymour, Mr. Beresford Hope and the Earl of Warwick, formed an almost unrivalled collection.

In the earliest examples of enamelling the colours were kept quite distinct and separated from each other by slender walls of gold. These were fixed with wonderful delicacy and precision before the introduction of the fusible vitreous material. Constructed divisions of this nature gave the name *Cloisonné* to the enamel. In the second stage of advancement, the same system of separating the colours was maintained, but the divisions were effected by a different process. The gold surface to receive the enamels was then scooped out into as many hollows as masses of colour were required, leaving the metal between them to form the necessary barriers. This kind of enamel from the process of hollowing was termed *champlevé*.* The third and last process was to paint freely over the entire surface of a flat plate metal, generally of copper, with vitreous colours, blending one with another as in ordinary painting and covering the metal as completely as an artist would his panel or canvas. Of this latest style by Courtois and several other fine artists of Limoges, &c., the most important came from Mr. Danby Seymour's collection.

Of Henri Deux ware, only forty examples being known in the whole world, Sir Anthony Rothschild contributed the most precious specimens.

* See the woodcut from the Art Treasures, contributed to this vol. by Messrs. Day.

FROM THE ART TREASURES OF THE UNITED KINGDOM.

Edited by J. B. Waring, Architect.

ENAMELLED CIBORIUM IN THE COLLECTION OF THE EARL OF WARWICK.

FLEMISH STONEWARE CRUCHE; SEVENTEENTH CENTURY.

In the possession of P. H. Howard, Esq.

IVORY SWORD-HANDLE.

Representing Perseus rescuing Andromeda from the Monster.
The property of Lord Zouche.

IVORY SITULA OF TENTH CENTURY.

With various scenes from the New Testament, inscribed in honour of the Emperor Otho the first.
Belonging to [illegible]

EMBROIDERY FROM A COPE OF THE FOURTEENTH CENTURY.

Belonging to H. Bowden, Esq.

Of Majolica, Palissy, Sèvres and other kinds of pottery it is impossible to speak in any detail, nor can the various articles of furniture and decoration be dwelt upon. One personal relic, however, excited considerable attention: this was Cardinal Wolsey's hat, formerly in the collection at Strawberry hill and now the property of Mr. Charles Kean, the Tragedian.

The art of binding books was abundantly illustrated, both in original examples of the various styles, when the workman often exercised his craft for the love of God instead of lucre, and also in the modern imitations by Leighton, Tarrant and others. A large series also of medallions and coins, in bronze, silver and gilding, especially of the Italian and German States, from the fifteenth to the eighteenth centuries, were deposited in side cases; these, although in themselves unattractive, were suited to convey most important lessons whether in portraiture or events, or to illustrate the history of the medallists' art.

Exquisitely minute carvings in ivory attracted much attention and surprised many by the taste in design and execution of which the material seemed capable. The ancient Roman Consular Diptychs have been already particularized; but the austere style of the Romanesque and Byzantine school was amply shewn in the large square casket belonging to Colonel Meyrick, and several Plaques from the Fejérváry Collection, now the property of Mr. Joseph Mayer. The more perfect Italian style was best exhibited in the graceful Bonbonnière belonging to Mr. Beresford Hope, M.P., whilst the luxuriance and freedom of composition and workmanship in latter times were most fully attained by the Flemings, as seen in the numerous cups, sword-handles and couteaux de chasse, contributed by Her Majesty the Queen, Earl Cadogan, Mr. Philip Howard and Mr. Goff.*

Rich specimens of embroidery with the needle and productions of the loom were distributed through various parts of the building. One case was especially remarkable for the mass of silk and gold-embroidered church vestments on which historical scenes were figured in numerous compartments; among them the Santo Volto of Lucca was especially noticeable. Many borderings of the richest ornamentation involved a display of pearls and precious stones upon gold and silver tissue.†

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* See the accompanying woodcut obligingly lent by Messrs. Day, from the Art Treasures of the United Kingdom.

† See the woodcut of an embroidered cope from the Art Treasures, obligingly lent for this volume by Messrs. Day.

FROM THE ART TREASURES OF THE UNITED KINGDOM.

Edited by J. B. Waring, Architect

GROUP OF CHINESE PORCELAIN.

Consisting of an Enamelled Compotier, with open cover; an Hexagonal Vase, finely painted; a richly decorated Plate; and a Teapot, with double kylin handle and gilt cover.

The property of Her Majesty the Queen, J. P. Fischer, Esq., the Rev. S. Titlow, and the Earl of Cadogan.

Consort's from Kensington Palace, March 18th. The Foundling Hospital and Mr. Stirling's, March 23rd, and the Diploma pictures from the Royal Academy, March 24th. They were for a while received at Manchester in a temporary place prepared expressly for them. The first instalment of art in the official buildings of the Exhibition, No. 100, Mosley street, was from Col. Meyrick, and consisted of a portrait of Nell Gwynne, the Holbein miniatures of Henry VIII and Anne of Cleves, and a portrait of Sir Samuel Meyrick, the founder of the Goodrich collection.

My first visit to mansions and galleries of art to inspect and select pictures according to the permissions granted by the respective owners, was to Lord de Tabley's and Mr. Smith Barry's, Marbury Hall, September 29th, 1856. My last visit was in April, 1857, to Liverpool, when I selected Mr. Baruchson's and Mr. Hodgson's pictures, and made a further demand on the Liverpool Royal Institution, which the directors very liberally sanctioned.

The contributions from Lord Spencer and Mr. Holford were, by subsequent arrangement, retarded to the last hour. The Duke of Manchester's also were accidentally detained, and in consequence of these delays many considerable difficulties and irregularities of arrangement in the galleries occurred. The following curious particulars are derived from some very authentic communications which have appeared in London since the closing of the Exhibition* and may serve in no small degree to prove the extent and working of the undertaking, as well as some of the immediate effects which it produced.

The galleries of ancient masters contained 1,079 pictures, exclusive of the 44 contributed by the Marquess of Hertford. The Portraits numbered 386, Modern pictures 689. Marble sculptures 160, Water colour drawings 969, Engravings 1475. The estimated worth of the 1812 pictures was nearly five millions of money.

The seven gentlemen forming the Executive Committee purchased the entire Soulages collection at the price of £13,500, for the express purpose of exhibiting it at Manchester. It has ever since remained on their hands. A police force, consisting of 67 men, under the superintendence of Inspector Pierce, kept constant watch in the building: forty-two men patrolled by day;

* Many very curious particulars on minor points connected with the exhibition were published in a series of Papers in the Literary Gazette, January, 1858.

An official return of the contributions and contributors to the Paris Exhibition in 1855, has also points of interest for the present occasion.

France herself contributed 1832 paintings by 1029 artists, Great Britain 374 paintings by 295 artists, Belgium 206 paintings by 134 artists, Prussia 154 paintings by 111 artists, Austria 107 paintings by 97 artists, Bavaria 65 paintings by 41 artists, Holland 98 paintings by 75 artists, Sardinia 36 paintings by 19 artists, Switzerland 97 paintings by 45 artists, Tuscany 1 painting by 1 artist, Papal States 11 paintings by 13 artists, Spain 69 paintings by 31 artists.

Of sculptures, France contributed 354, Great Britain 80, Austria 91, Prussia 38. Of engravings, France 442, Great Britain 329, Holland 30, Prussia 53, Saxony 12.

It may be generally admitted that, with the exception of Italy, Great Britain, taken altogether, contains a greater amount of excellent pictures than any other country. The existence of these fine works is known chiefly by records of sales as they pass into private hands. Until the year 1824, no acquisition of pictures was made by Government for the benefit of the public, and until that period there was no place whatever where the working classes could obtain access to first-rate pictures. The avidity with which our monied countrymen purchase works of art has long been known, and it is remarkable also that most of the important sales of pictures take place in England. Objects of art are sent over here for that express purpose, and with the exception of the collections of the King of Holland, Soult and Cardinal Fesch, all the best works seem to have passed under an English hammer: many of them, it is true, to return to continental ownership; many also into private hands in our own country. To obviate this fate of seclusion which had even then befallen so many chefs d'œuvre in England, the annual exhibition at the British Institution, Pall Mall, was devised. There, in three small rooms, a certain number of pictures is annually gathered for the season from private hands. But their yearly number is very limited, and it is, after all, only those persons actually resident in London, who can, after a long series of exhibitions, obtain any notion of the vast extent of treasures which our country does in fact possess. Foreigners who come over for a few months in the season, can have but a very poor idea of our pictorial riches. Persons also who might otherwise desire to study these works find it too long and too expensive a labour to go about from one mansion to another

asking for permission of access, and strangers cannot always foresee the nature of the various impediments that may lie in their way.

In 1832 Dr. Passavant of Frankfurt am Main made a somewhat extensive journey through England, and published an excellent account of his travels, dwelling especially upon the pictures and works of art which then came under his notice. The work was translated into English and had a decided success. The original preface to Dr. Passavant's volume contains much useful bibliographical information on works of art in England as they existed up to that period. Dr. G. Waagen visited our country in 1835, and in point of amplitude greatly improved on Dr. Passavant. His work was also translated into English; but it was not till the year 1851 that Dr. Waagen obtained that general reputation as an art critic which he deserved. The publication of his notes on art in England, in 1854, extended to three large volumes with an excellent index, established him at once as *the* authority upon such matters. Various offers of contribution, however, soon revealed that, notwithstanding the activity of Dr. Waagen during his repeated visits, he had by no means exhausted all the choicest works contained within these shores, and the publication of a fourth or supplemental volume by him, subsequent to the Manchester Exhibition, affords the best confirmation of this statement.

An exhibition, therefore, of *Pictures* on the principle of the London British Institution, but of course vastly extended, would be in itself most desirable; and this system Manchester chose to adopt, as she desired to attract all the world. Once determined on, the catalogues of the British Institution, Dr. Waagen's works, besides extra notes which he obligingly supplied, and the writings of Horace Walpole, Dr. Passavant, Mrs. Jameson, Smith's Picture Catalogues, Granger and the "English "connoisseur," afforded a most valuable basis.*

That an exhibition of this nature was already much wanted in England, seemed quite evident. The entire result now shews, however, that

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* In compiling the official catalogue, I took especial care to give every reference to the above works, and cited both page and volume, with my best accuracy, in the desire of affording means to those who might choose to make themselves more minutely acquainted with the history of the pictures, than was possible from the official shilling volume. My own strong recommendation to the Committee had been from the first to have fuller and more expensive catalogues of particular departments prepared, as well as slighter ones, to be sold at different scales. This course seems to have been very successfully adopted at the National Gallery and Hampton Court Palace.

Manchester was not at all the best locality for it, nor were the people who crowded there during the later days that the Exhibition remained open, prepared to receive any special benefit from it, beyond what *good copies* educationally arranged would have afforded them. A Sydenham Palace combining pleasure with education would have been more beneficial. The sight of the most precious pictures by old masters, which require a special study and education before hand, was of no real advantage to them; worn and torn canvases, blistered surfaces and strange impersonations could not be expected to engage either their attention or sympathy. But with modern, fresh, clear intelligible pictures, the case was far different. Of modern art, a still more extensive series, especially from foreign countries, would have rendered immediate benefit.* Had these ancient and mysterious pictures been ticketed with the names of the respective owners and the prices that had actually been paid for them, the gazers might have come away with some definite idea; but to the majority these old works were mere dingy masses of canvas and blotches of colour. That which appeals to present feelings was more important for them. A collection of the best procurable *copies* from the greatest works of the old masters abroad—and many very excellent large copies, both ancient and modern, could easily be obtained in this country—would have been quite as effective, and, to my thinking, much more locally beneficial.† The result, however, has proved that Manchester founded a guest-hall principally in her galleries of the old masters. Here it was that foreigners especially and the dilettanti of the south delighted to congregate, for the exhibition afforded information and benefit to each person in proportion to the knowledge and experience he brought with him.‡

Much, however, had been expected from the spontaneous visits of the working classes during the great annual holidays of the manufacturing district, Whit Monday and Tuesday; but the people whose duties keep them under mill-roofs day after day, naturally preferred the fresh air; and

* It was, however, amusing to hear how readily technical terms were made use of by persons of superior station, becoming really in many mouths a sort of cant.

† This feature I strongly recommended in a letter addressed to the Committee at the very outset of the undertaking.

‡ Of the older and more severe pictures, both German and Italian, it could not be expected that a general mass of working people would take much account; but I was powerfully struck by the tone and manner of those among the lower classes who *did* stop to look at them, as well as of those who merely cast a glance as they walked by. It was quite evident that the painter and they had nothing in common; but these spectators did not jeer or ridicule, they frequently *wondered* what was to be

the excursion trains conveyed them in dense numbers as far as possible among the blue hills and green trees of Lancashire and Yorkshire, where they enjoyed themselves to their hearts' content. The lower and uneducated classes did not go to the Art Treasures willingly. Many went because they were told they ought to go, and vast efforts were made towards the close to send whole schools, institutions and districts of children by means of subscriptions and various forms of treat-giving. In this way the galleries became densely crowded, so that many who both could and would have enjoyed the works of art thus temptingly arranged before them, were prevented. Had *educational* information been at the same time afforded to these helpless children and factory people, a more direct benefit might have resulted. Had the promoters of the Exhibition taken more time over it, and during three years instead of one, *disseminated preparatory instruction* among the lower classes, they would have afforded far more gratification.

The portrait gallery, although greatly exceeding the hopes and expectations which were entertained of its importance at the beginning, was totally lost upon the mass of visitors for want of labels to indicate the names at least of the persons represented.

When I had the honour of addressing the Members of the Historic Society during their visit to Manchester, I particularly stated my intention of affixing labels to the pictures, and having writings on the walls to mark the various schools and leading dates. This design, however, for which I had made extensive preparation, was set aside by a decision of the superior authorities.*

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seen in such things, and sometimes an exaggerated attitude raised a laugh; still, for the most part, the cruder efforts of the old artists were regarded with respectful silence, and it was therefore the more to be regretted that the people who did come were not better prepared. But—it may be said—"the effects are yet to come, what these people "have now seen will sink deep in some minds at least." True, *in some*, but that only among the younger ones. Had a different class of objects been prepared for their notice, the effects would have been not only more decided, but more immediate.

* When we remember the advantages afforded by the numerous labels and inscriptions adopted in the great Hyde Park Exhibition, and the important part they filled even as a means of graceful decoration and cheerful colour—white letters upon red—the recent deficiency seems the more to be regretted. The general colour of the walls at Manchester was a dull green; but when accident, at the time of the heavy rains, compelled the temporary substitution of red cloth behind the pictures, an improvement in effect was universally admitted. In saloons A, B and C, the pictures were so close, that scarcely an inch of wall could be seen; but in the Hertford and modern galleries, especially saloon D, the dull green had a very poor effect.

Had certain days or parts of days in each week been reserved at a higher price, and devoted to lecturing and instruction, much good might have resulted. Indeed, as in Hyde Park, I fully expected a lecture-room would have been constructed.

A library of reference was also a great desideratum to working visitors at the Manchester Exhibition. Books of engravings and descriptions of the principal galleries of art are always necessary for those who really desire to study the subject and make comparisons. Manchester itself did not appear to contain many high-class or expensive works of this nature, nor could casual visitors think of taking ponderous books with them. At the same time, having such books at command in London, there would have been no chance of their purchasing them of the booksellers. A well-chosen library, arranged like the one till lately at Marlborough House, with a trifling sum charged for admission, as at a news-room, would have rendered very general service.*

It may after all be fortunate, that many of our finest private collections of pictures were not forwarded to Manchester. Their very absence led to the acceptance of offers that would otherwise have never been entertained; and by these circumstances a large class of excellent and much less known pictures were brought to light.

In my preliminary arrangements with the Executive Committee of the Manchester Exhibition, I undertook to collect for them various objects of ancient art and pictures by the old masters, and to arrange and catalogue them on the walls of the Exhibition Here my engagement terminated. I strictly, from the first, limited my labours to the old masters, avoiding any connection with the galleries of modern art, and I particularly declined to have anything to do with returning the pictures after the close of the Exhibition. At the same time strong reasons were frequently held out to me to believe that I could be of much service to the Committee in an educational point of view, both in lecturing and affording information to visitors when the Exhibition had once opened; but it appeared, as the preparations advanced, that such thoughts were not entertained, and all information was to be entered in the catalogues alone. A handsome letter

* Finding the impossibilty of procuring books necessary for reference whilst preparing the catalogue, I had numerous works in my own library forwarded from London. Many of these being both rare and serviceable, I would gladly have deposited, for a while, in such an accessible collection.

of thanks from the Executive Committee terminated my directorship of the Manchester Exhibition. I offered the Committee to devote a month of my own time, free of expense, if they would only employ persons to write and prepare the labels I might dictate to be affixed to the pictures and the walls. My offer was rejected, mainly, it appeared, on the ground that it might interfere with the sale of the catalogue. I even pointed out that several errors remained in the catalogue and would have corrected them, but received official intimation that any further changes were not desirable.

These comparatively trifling matters are mentioned here for the sole purpose of accounting for the nonfulfilment of measures which I had announced to the Society, and towards which, at the time, I was so much encouraged by the members. I am naturally anxious to record what I *would* have done, and to express a hope that in any future undertaking of similar magnitude and importance, the system of *labelling for the multitude* may be carried into effect. Both in the National Gallery and the British Museum that system works admirably. It has been proved in those establishments that a ready display of the leading names, both of artist and subject, serves only to excite a desire for further information, and that in consequence a greater number of catalogues have been sold.

Looking, however, to the walls of the Exhibition, there were many serious gaps and many shortcomings that could not have been anticipated: even after the preparations had considerably advanced, not a few disappointments as to pictures arose. None, however, were so severely felt or so much to be regretted, as that of withholding his contribution at the last moment, on the part of Mr. Munro of Novar. The superlative quality of his pictures is universally known and he clearly named and promised pictures which I had seen, measured, and reserved spaces for on the walls, till the last minute. Sir John Ramsden, also, liberally consented to lend pictures, but the packers unfortunately were not able to reach his country residence in time. The same misfortune caused the extensive picture contributions willingly granted by Mr. Danby Seymour, M.P., Sir Archibald Campbell and Mr. Edward Cheney, to be of no avail, and a very important bust, by Bernini, of great interest in the history of art and readily promised by Earl De Grey, was also lost. The extraordinary Van der Neer, belonging to Lord Shaftesbury, and several other works had also been promised. Mr. Blundell had assigned a very extensive supply of pictures from Ince Hall; but found

at the last moment that legal conditions prevented their being removed from the estate. By this means a very important picture by Van Dyck, and many early German and excellent Italian pictures, as well as some very fine Wilsons, were lost to the Exhibition.

A positive order having been issued by the Committee at the time of the opening of the Exhibition, forbidding the reception of any more works of art, *however excellent*, rendered all counteraction of these disadvantages impossible. Stringent rules also were enforced against making even the slightest notes or shorthand sketches in pencil from any of the pictures. The chief point of regret, however, as having impaired the tone of the gallery of ancient masters, was the rigid determination of the Committee to retain and hang whatever pictures had actually arrived at the building. In consequence of this, many works that had been sent on private recommendation or through other circumstances, when placed with genuine works, suffered and inflicted wrong by the contrast. Had I been permitted to act upon my own judgment in this respect, I would at once, and unhesitatingly, have returned at least *three hundred* pictures.

In consequence of the great number of works of art in proportion to the space prepared for them, many paintings of superlative merit were placed at an inconvenient distance from the eye. To counteract this, it would have been well, at certain intervals, to have interchanged their positions vertically, and to have brought some of them for a while nearer on a level with the spectator. By this means the sequence of the numbers for reference in tracking the pictures by the catalogue would not have been seriously impaired. These considerations seem to me to be worth noting, inasmuch as they may be serviceable in future towards the management of any similar collection.

It may be supposed after the foregoing remarks, that I would have discarded all pictures of an inferior quality; that, however, I certainly could not have held desirable. One among the many objects of an assemblage like the one in which I was permitted to take so active a part, I hold to be the collecting of all works that persons would *most desire to see*, and for that reason *celebrities*—whether justly or unjustly so—would be thoroughly admissible. One result of the Manchester Exhibition has already been to convince connoisseurs that many celebrated works of art until then kept secluded, or in peculiar positions difficult of access, were not deserving of the

pains that seekers might bestow upon them. Of this class it will suffice here to mention the Oakover pictures, and one, a "Silentium after Michael "Angelo," belonging to Mrs. Dawson. At the same time, it is but fair to add that the near view and broad light which dispelled so many other charms, had also the good effect of establishing the merit of several pictures which had so recently and unexpectedly been brought to light. There is no doubt that if more time had been allowed in preparation, many more discoveries of this kind would have taken place.

Another distinctive feature of the Manchester Exhibition was also to be found among the contributions of statuary.

The number of examples of this art, compared with those in the Hyde Park Exhibition, was far more limited, and for the following reason.

The Committee resolved to admit no sculpture whatever in plaster; all were to be either marble or bronze. This limitation, although it may have gratified the denizens of Manchester by the sight of a clear translucent material, led in many cases to the substitution of the pretty and ornamental for works of a higher order. It was perhaps a correct assumption that no one would send a marble statue to so great a distance where plaster casts were also admissible, and that by laying down so exclusive a rule a fair contribution of Parian and Carrara marbles might be forthcoming. Such, however, proved to be the case, and it was really surprising that so great a mass of marble sculpture could be obtained. Manchester, it seems, would have the *real* material, and seemed to believe that the pure, beautiful and delicate white plaster was an unworthy means for an artist to express his thoughts in precise form. But it is clear that by means of this restriction, many of the grandest, most sublime and most effective productions were repelled.

By this arrangement, sculpture,—so intimately allied with painting and so rich and varied in character,—sank low in the Art-Treasures' Exhibition.

In Hyde Park, however, the abundant display of plaster statuary did not retard the contribution of marble works; but that was in the metropolis, and it must be remembered that every thing there was comparatively on the spot. At Manchester, the Duke of Newcastle and Lord Ward were the most extensive and liberal contributors of sculpture. The late Mr. Smith Barry also rendered most valuable assistance by the numerous antiquities which have been already named. Mr. Cornwall Legh, M.P.,

exhibited a charming and massive group of Ino and Bacchus, of which also a duplicate was sent by the Marquess of Abercorn.

Basreliefs and busts in marble were comparatively easy of transport, but of the former only a very limited number could be exhibited, since the wall-space was almost totally occupied by the paintings. The heroic statue of Napoleon I, by an Italian artist, and a graceful figure of Euphrosyne, by Sir Richard Westmacott, R.A., were among the most important of the contributions from Clumber House. The Greek Slave, by Hiram Power, and the recumbent Magdalen, by Canova, were valuable additions from Lord Ward's gallery. The Greek Hunter, by Gibson, a group of Adam and Eve, by Schuler and a fine statue of Venus, by McDowell, in imitation of the antique, were especially deserving admiration. Nor should McDowell's colossal group of Virginius and his Daughter, which so long occupied the most central position, at the intersection of the transepts, pass unmentioned.

There was, however, no veiled vestal, as in the 1851 Exhibition, to captivate the public. The best statues in the late exhibition, besides those already mentioned, were Bailey's "Eve at the Fountain," Ganymede, by Flaxman, Paris, from the School of Canova, Venus and Cupid, by R. Davis, the wounded Amazon, by Gibson, a basrelief of Angels, by Thorwaldsen. Busts of Wellington, John Hunter, Dr. Simpson, Tennyson, Dr. Frewin by Roubilliac, and Cardinal Grimani by Alessandro Vittoria were seen to considerable advantage.

The group representing a Boy and a Dolphin, attributed to Raphael, although by no means satisfactorily proved to belong even to his school, was a highly valuable addition to the collection, as it afforded judges and lovers of art the fair means of investigating for themselves a work which, like certain pictures already alluded to, has long enjoyed a high reputation and been much talked about.

Having thus far spoken of the preparations and arrangements as conducted by the committee and their officials, it may not be uninteresting to glance at the various literary productions which the undertaking called forth.*

* It was at first expected that the Committee themselves would have published some elaborate and authentic work on the Exhibition, as was the case after the Great Exhibition in Hyde Park; but towards the end of September it was clearly made known that nothing was intended to be done; and Mr. Murray of Albemarle-street, after conferring with the Committee, withdrew also from any undertaking of that nature.

The observations also in the *Quarterly* relating to the building itself are so pertinent that a transcript from page 202 may be generally acceptable.

"No one can enter the Exhibition at Old Trafford without being im-
"pressed with the admirable adaptation of the building to its immediate
"purpose—the display of the works it contains There is no attempt at
"fine architecture, no imitation of a Greek temple or mediæval town hall.
"The materials most fitted for the construction of a light and spacious
"edifice—brick, glass, and iron—have been employed, and only one thing
"has been kept in view—the object for which the building was intended;
"its construction not having been confided to the exhibitor of the best
"design in Tudor, Gothic or Italian Renaissance. The result has been
"the erection of a very noble picture gallery, in which pictures may be
"placed and seen to the greatest possible advantage. There is ample
"space for hanging, room to judge of the effect of a work of art from a
"distance when necessary, subdued equal light and admirable ventilation.
"When will it be understood that the best architecture consists in that
"which most completely fulfils its object, which shews the greatest command
"over the materials that are obtainable and which represents the wants and
"feelings of the day? It is because they unite these qualities that two
"of the most successful modern buildings with which we are acquainted
"are the reading-room at the British Museum, and the Manchester Exhi-
"bition." The following also, from page 166, is so full of truth and obser-
tions in which I concur, that a second quotation may have the advantage of better language to express my own thought than I could otherwise have offered to my audience.

"An Exhibition comprising pictures gathered from so many different
"sources may be compared with the magnificent collection brought together
"by Napoleon after his Italian conquests, rather, however, as offering a
"contrast worthy of the spirit of the age—the contrast between the triumphs
"of war and the triumphs of peaceful industry—than with the view of
"making any comparison between the merits of the pictures in each. The
"Commissioners employed by the Emperor drew without stint from the
"richest mine of art that has ever been opened to the christian world;
"churches, convents, palaces, galleries—every edifice which christian piety
"or princely munificence had adorned with the greatest works of the
"greatest men—were ransacked to render complete a collection worthy of
"the world's capital. It was a tax levied upon the genius of Italy, and the
"tax-gatherer spared none. We may then easily credit the description
"given by those who were privileged to wander through the vast galleries
"which contained these treasures of art, and we may believe, as well as in
"charity hope, that the like will never be seen again.

"There were few pictures thus brought together which were not ranked
"amongst the best productions of the masters who painted them. The
"somewhat limited nature of the collection, as regards the class of works
"exhibited, was to be attributed to the taste and prejudices of the day.

"At that time the feeling for the pure, simple and devotional character of "the early Italian masters had not yet been received. The eclectic "schools, as it is the fashion to call them, were in vogue; consequently, "whilst only a few of the most celebrated pictures by the great masters, "who lived previous to Raphael and Leonardo, were collected, the Louvre "was crowded with the works of the Caracci's and of the later Bolognese "schools, Guido, Guercino, Domenichino, and their pupils and imitators. "To represent the earlier Italian schools of the fourteenth and fifteenth "centuries, there was little except one or two fine pictures by Pietro Peru-"gino. Nor had the instructive system of arrangement in chronological "series by schools, illustrating the gradual development of each, been yet "adopted. Had a well-digested scheme, founded upon this obvious and "now fully recognised principle been carried out, the gallery of the Louvre "would have been the most complete and important illustration of art-"history and of the progressive unfolding of human thought that the "world ever saw.

"In the quality of the works collected, the Exhibition at Manchester can "in no way be compared with the Louvre under the empire. Of the "Italian schools of painting we have scarcely one picture which can furnish "any adequate idea of the power and genius of the illustrious men who "are first in the hierarchy of art, and whose master-pieces can best be "studied in the churches and great collections of Italy. Nor is the Exhi-"bition equal for the class of pictures it contains to the principal galleries "of Europe. And yet it would be difficult to form a more instructive and "interesting collection—one which, at a moment like the present, when art "is beginning to be better understood and more widely studied, could afford "more useful hints and teach more to the English public."

Both the *Quarterly* and *National Reviews* observe the want of minute completeness in the hanging of the pictures by the old masters, and they, at the same time, both justly and correctly presume that difficulties and hindrances beset the undertaking. They did not, however, seem to have been aware of my studious desire to exhibit *celebrities* in the strongest light, or of the rule, —although stated in the catalogue—that was laid down from the first, and formed part of an agreement with many of the contributors, that the pictures should be called by whatever names owners chose to send with them. In some instances, as far as time allowed, I was able to append more correct designations than were at first sent; but Lord Northwick, like many others, remained stedfast in his adherence to the names already assigned in his gallery catalogue.

To resume my mention of the books printed to illustrate the Manchester Exhibition, there were two cheap publications called the *Art Treasures' Examiner* and *Cassell's Art Treasures*. These, although not exclusively relating to the collection at Old Trafford, may have rendered good service

by disseminating some general ideas of art, and by affording some rough wood-cut illustrations of the principal objects of the Exhibition that many would cherish as souvenirs or indications towards better things. The *Handbook to the Exhibition* by Thomas Morris, was a pamphlet hastily made up from information gained during the preparations. Foremost, however, among authentic guides should be placed Dr. Waagen's well-timed, but too scanty, work called "*What to observe. A walk through "the Art Treasures' Exhibition under the guidance of Dr. Waagen.*" In this the worthy Doctor did little more than select particular pictures for observation, and give, as had already been done in the shilling official catalogue, a reference to the page and volume of his "Treasures of Art in Great Britain," containing the description of each picture. As Dr. Waagen did not enter upon the modern galleries, an excellently executed and ample "*Companion to a Walk*" was published by an amateur. It really contained a great amount both of historical and critical information. Like Dr. Waagen's the price was one shilling.

Jerrold's Guide, price sixpence, contained a large amount of well and closely printed type, with all points of information clearly arranged and strengthened by various quotations from the *Times*, *Athenæum* and *Saturday Review*.

The earliest of the penny guides was the "*Peep at the Pictures*," capitally executed for its purpose, because addressed to persons utterly inexperienced in art; and it consequently had an enormous sale. "*What to see and where to see it*," also a penny guide for the operatives, went through various editions, and deserves to stand high among works prompted by benevolent feelings.

There was besides a clever, but strange, account of a visit to the Art Treasures' Exhibition in a magazine called "The Church of the People," No. 3 vol 3, July, 1857, and the Exhibition was likewise the theme both of Sunday tracts and sermons, among the latter of which may be mentioned "*A word in season*," by the Rev. Canon Stowell, preparatory to the opening on the 5th May; and "*The Mother and the Queen*," by John R. Beard, D.D., after Her Majesty's visit, June 30th, 1857. Several strange works also were published in the Lancashire dialect apropos of the Manchester Exhibition. Among them "Sam Sondnokkur's Ryde fra Ratchda to Manchister." "Bobby Shuttle and his Woife Sayroh's visit to Manchester un'th Greight

2,540 of the operatives from the famous Saltaire Works, near Bradford, visited the building at the sole expense of Mr. Titus Salt, including their refreshment. On the same day 400 scholars from the Prestwich Church Schools were present, at the expense of the Chairman of the Committee and the Countess of Wilton. On Saturday, the 22nd of August, upwards of 800 of the mechanics in the employment of Messrs. Fairbairn and Sons, the eminent engineers, visited the building. Here again, Mr. Thomas Fairbairn, the Chairman of the Executive Committee, defrayed the expense.

On the same day, about 800 of the work-people of Mr. Edmund Potter, from Dinting, were treated by their employer to a visit.

The children of the Manchester Deaf and Dumb School visited the Exhibition on the 12th of June.

Four hundred children of the Worsley School were treated to the Exhibition by the Earl of Ellesmere, on the 21st of September.

Notwithstanding all these exertions, the operatives themselves manifested but little sympathy. Among these vast bodies, thus introduced, the workmen from Mr. Edmund Potter's at Dinting, showed most interest and gratification. This may perhaps be accounted for in two ways: firstly, Mr. Potter is known to have always devoted especial care to afford his men every opportunity of obtaining useful knowledge and recreation; and secondly, the very nature of their occupation, calico-printing, has an essentially artistic element connected with it.

A letter, addressed to the *Times* of Sept. 16th, dated Manchester, gives a faithful picture of the proceedings of many a fustian-jacketed visitor. The following is an extract from it.

"We have not a population, within a reasonable distance, who can be "expected to appreciate it, (the Exhibition) and although one of our news-"paper editors started the theory that the study of the ancient masters would "interest and elevate the masses, I think that few will be found to agree "with him; it is like feeding infants with 'strong meats.' To shew what "the masses can appreciate, I may state that a firm, in Sheffield I think, "sent their work-people to the Exhibition, and also made provision for them "having refreshments there; yet, notwithstanding this, in a short time after "reaching the building, few were to be found in it, the bulk of them having "gone to Bellevue-gardens—something like your Cremorne. Nor can this "be wondered at, the people were true to their instincts."

I am not aware of any association or subscriptions like the Alpha Fund, that was started at Manchester in the course of September, having been

adopted either in London, during the Hyde Park Exhibition, or at the Sydenham Crystal Palace. The object of this benevolent scheme in Manchester was to afford all helpless Sunday school children and others, who had not sufficient, means to visit the Exhibition.

Sir James Watts, the Mayor, and Mr. Thomas Fairbairn, the Chairman of the Executive Committee, each subscribed £100 to the Alpha Fund, and by the successful working of this subscription, a considerable addition to the number of visitors was secured. It is among these young and not yet too firmly-moulded thoughts and perceptions that the best results are to be hoped for. Young children, although their fingers may have been already doomed to manual labour, have their minds still elastic, and although worldly cares *do* sit earlier on the brow in Manchester than elsewhere, fresh thoughts have more chance of making an impression on them than on a world-bound family man. Thus, it may chance that some of these infantine mill-hands, having seen the beauty and capacities of art among the modern pictures—the ancient I have already withdrawn from the pale of consideration—may in after times proclaim, by a natural talent rightly evoked, that the Manchester Exhibition had served as a means towards the *creation* of art.

After the closing of the Exhibition on the 17th of October, 1857, when Mr. Fairbairn addressed a short and appropriate speech to the company about to withdraw, the public knew little more about the proceedings of the Executive Committee.

All arrangements for the separating, removing and returning the multitudinous portions of the Exhibition, had been so efficiently and perfectly pre-organized by Mr. Deane, that from Monday, the 19th, when the work of dispersion commenced, everything proceeded rapidly and smoothly, and by the 23rd of October nearly all the water-colour drawings and engravings had been removed. On the 31st of October, the *Manchester Guardian* reported that of pictures by the ancient masters only about 150 remained in their places; nearly all the historical portraits had disappeared; not more than a score of modern paintings remained in the northern saloons. "Everywhere there are long lines of packing-cases, and groups of men "filling or removing them. The great bulk of the contributions of Her "Majesty the Queen has been despatched to Windsor or to the metropolis; "and at eleven o'clock this forenoon, a special engine starts with most carefully "loaded trucks, bearing all that remains. Her Majesty's contributions fill

"no less than 139 cases, some of them of the largest size; and it must be "remembered that this statement has no reference whatever to the many "pictures and other works contributed by the Prince Consort, which are very "nearly ready to be returned. Among other things sent from the Palace "since our last notice, may be mentioned the Earl of Yarborough's (59 "pictures in 16 very large cases), those of Earl Spencer, the Earl of "Feversham, the Earl of Derby, all that belongs to the East India Company, "the contributions of Mr. Howard Galton, &c."

On November 7th, the same journal states,—"We found yesterday, "that not many more than 20 oil paintings of any kind remained on the "walls of the Palace, several of the saloons on each side being completely "bared. The sculpture not packed, or not in the course of packing, does "not exceed 25 works; much of the armour has disappeared, huge packages "encumbering the floor; all the cases have been more or less stripped; and "of the Soulages Collection only a few articles are now visible."

On the 11th November, the last detachment of pictures left the building, and included Viscount Galway's large picture of Charles 1st and his Queen, attended by the dwarf, Sir Jeffrey Hudson, starting for the chase. This work of art, measuring 9 feet in height, and 15 feet 6 in width, was of necessity removed by a waggon and horses, as neither railway nor canal could possibly convey it.

On October the 28th, the Executive Committee rendered to the subscribers of the Guarantee Fund an account of their administration. The general meeting for this purpose was held in the Mayor's parlour at the Town-hall, Manchester. In the report read by the Secretary, Colonel Hamilton, it was stated that 1,053,538 visitors paid for admission; 282,377 times the season ticket holders availed themselves of their privilege, making a total number of 1,335,915 visitors.* "Up to the public close of the "Exhibition on the 17th instant, the cash receipts from all sources standing "to the credit of the Committee may be stated at £98,500. The total ex-"penditure up to the same period, and the further liabilities which are "definitely known to the Committee, such as cost of police to the end of "November; insurance of all kinds, rents, &c., amount to £99,500. The "still further outlay to be incurred, includes all the expenses of returning "the contributions to their respective owners. It will be seen at once that "it would be impossible, at the present moment, to give anything more than

* From reports in the Times and Manchester Guardian, October 29th and 30th. In illustration of the great traffic created by the establishment of the Art Treasures' Exhibition, it may be interesting to mention, that in the Illustrated News of August 28, 1858, it is stated that in the months of May and June, the Art Treasures' Exhibition at Manchester brought a clear profit to the Company of the North Western Railway of £20,000. What, therefore, must have been the profit on the whole period of the exhibition, if £10,000 for each of the first two months?

expressed his regret at not having been a contributor to the Galleries of Art, entertained the Executive Committee at Chatsworth, and gave on this occasion a banquet and ball expressly in commemoration of the Manchester Exhibition of Art Treasures.

On the 31st December, at a *déjeûner* given by the Manchester Town Council in the Mayor's parlour, the Executive Committee appeared publicly as a body for the last time. The purport of the meeting will be best seen by the following extract from the resolution which the Mayor read. "That "this Council is deeply impressed with the great advantages conferred upon "this city and the community at large, by the recent Exhibition of Art-"Treasures of the United Kingdom, an exhibition of works of art unrivalled "in magnitude and value, the examination and study of which were emi-"nently calculated to improve the knowledge, and elevate the taste of all "visitors, and, by bringing together different classes not accustomed to "associate, to promote goodwill and kindly feeling among all sections of the "people."

The great interest which the undertaking at Manchester seems to have awakened throughout the United Kingdom, and the energetic attempts made by all lovers of art who could compass the means to visit that locality, suffice to prove the want of some collection of this kind on a larger and more extended scale, in a more accessible place for those classes who can best enjoy and benefit by it, whilst the enterprise which has been so honourably terminated at Manchester, might render great service towards it, both in the way of example and experience.

Energetic movements, it appears, are already begun towards a great national exhibition in London, to be held in 1861. The Society of Arts have expressed their opinions strongly in favor of decennial exhibitions; but the date now proposed will by no means leave the operators time to spare.

In 1851, England displayed her relation with, and influence over, the produce of the rest of the world.* In 1861 she might advantageously

* I perceive that I omitted, by an unpardonable oversight, to mention two important Exhibitions at the commencement of this paper. Birmingham, previous even to the London one, held an extensive Exhibition of Manufactures and Art, in 1849. The temporary building to contain it was, as the Hyde-park one was at first intended to be, entirely of wood. It measured about 128 feet in length, and 90 in breadth, forming a kind of Basilica, with nave, clerestory and aisles. Glass and metal-work were then confined entirely as materials to the objects collected for admiration.

On the 9th of June, 1852, the Irish Industrial Exhibition was opened at Cork, with great éclat; it led the way for Mr. Dargan's spirited undertaking at Dublin the following year.

shew not only her own produce, but her actual *possessions* in the fine ar confining her exhibition, as Manchester was the first to devise, exclusi to the property of subjects of the United Kingdom. If indeed, as n seems more than probable, this undertaking be fairly carried into e in the Metropolis, we may hope to see a worthy successor to the g Hyde Park Exhibition, by which the greatest boon ever conferred in time upon pictorial art will be secured.

In point of picture-gathering, Mancestrian enterprize has certai gained the start of the Metropolis, and, from what has already been d London may derive much valuable experience. The non-appearanc many of England's most celebrated pictures at a provincial exhibi might be regretted; but their absence from a Metropolitan collecti would be fatal.

The display of engravings and the best obtainable copies of gre foreign works, whether old or new, on the original scale, would be hig instructive and beneficial, and the clearness and accuracy of the order their arrangement, in favourable space, would be a chief means to po larize them. For all these requirements, the time between this and 18 would appear comparatively inadequate. But, by means of accura reductions of the pictures, made to scale and arranged in models of th galleries of corresponding dimensions, (provided, of course, that perfe accuracy be secured), much trouble, uncertainty and delay might be avoided.

Having spoken thus freely upon points which appear to me to have bee most characteristic, as well as others which remained deficient in th working of this great enterprize, I feel it a duty to render full acknowledgment of the universal kindness and urbanity of the gentlemen who constituted the Committee of Management; indeed the anxiety and incessant attention which they extended even to the most trifling minutia can only be known to those who laboured with them. Mr. T. Fairbair and Mr. T. Ashton were truly indefatigible; nor can there be any doub that the successful working of the whole enterprize was mainly owing to their clearsightedness, energy and devotion.

The policy of attracting visitors to a particular spot, and thereby promoting trade and commerce, has been successfully adopted by King *Louis* of Bavaria in his art capital, Münich. Rome, indeed, has long been

principally supported by visitors to her decorated churches, ruins, palaces and galleries; and never, perhaps, was concourse so extraordinary as that which flocked to the papal city under the religious excitement raised by the jubilee of Boniface VIII in 1300. It succeeded so well, that the inducement was repeated several times afterwards, sometimes even at short intervals, but always with a certain amount of success, yet never, as might naturally be supposed, with the same intensity which distinguished the first.

Our great Exhibition in Hyde Park of 1851, was not inaptly termed "The World's Fair." In point of influx it seems to have been to London what the gathering of 1300 was to Rome. That parallel may now very fairly be extended to the Exhibition at Manchester in 1857. The employment and admiration of art for such purposes is surely the best policy, and must be hailed as a proof that a nation has attained the highest civilization.

With regard to Manchester, we must indeed echo the hopes expressed by the enlightened chairman on the occasion of his receiving the thanks of his fellow-citizens, namely, that another and an important benefit would be found among themselves, that henceforward they would all feel that it was not incompatible with the successful pursuit of trade, or the exciting struggles of commerce, to enjoy or have an appreciation of the beautiful and the chaste. He believed that the more those feelings were cultivated the happier would be their homes and the more enjoyable their lives.

Desirable, indeed, as a London Exhibition does appear, and whether the Art-Treasures' Exhibition of Manchester may hereafter be looked upon as the pioneer, or the experimentum crucis of such a gathering, all remains vague. But the Manchester Exhibition is *achieved:* it is a certainty, and as such is now to be thought of and dwelt upon. In all its details, the more attentively it is considered, the more convinced must every one be, that those who started it realized, to the fullest degree, all they had actually undertaken to effect, and that nothing but indomitable will, steadiness of aim and the concentration of all those business-like qualities which so essentially distinguish the Englishman, could have surmounted so many serious obstacles or have established the exhibition on so firm a basis.

PROCEEDINGS.

TENTH SESSION, 1857-58.

ANNUAL GENERAL MEETING.

St. George's Hall, 19th October, 1857.

J. T. Danson, F.S.S., V.P., in the Chair.

The minutes of the last meeting were regarded as read, and were confirmed.

The Honorary Secretary read the following

REPORT:

In resigning their offices at the close of the Ninth Session, the retiring Council have pleasure in reporting to the members, the uninterrupted progress and healthy condition of the Society. The routine duties are performed with greater ease and facility; the intellectual material is abundant; the numerical strength of the Society has increased; and the mutual intercourse of the members has been promoted.

At the close of the eighth Session, the number of members of all kinds, as shewn by the printed list, was 458; it is now 491. These consist of 47 life-members, 243 resident annual, 167 non-resident annual, 3 lady-associates, 3 ex-officio, and 28 honorary. Some of these retire voluntarily to-day; and a few it may be necessary to bring before the Society, for the operation of Law XII.

The Annual Volume has been later than usual in its issue; but it is now sent out to the members. It should be understood distinctly that it is forwarded to every one whose subscription for the ninth Session is paid, whether he is retiring or not, and that it is withheld from those members only whose payments are in arrear more than one Session.

During the Session, the Catalogue of the Collection was printed off, and the whole is now in perfect order. On every evening of meeting, the Society's Room will be open from Five till within a few minutes of Seven, and members who cannot attend may obtain books by a written application to the Assistant Secretary.

The Treasurer's Balance Sheet shews that the sum of £417 2s. 6d. has been received, and £442 7s. 7d. paid; but some considerable items were of a special and unusual kind. The working expenses do not exceed the estimated average, and there is a sum of £14 5s. 11d. in hand.

The practice has been continued, this Session, of throwing open to a larger number of Visiters, including Ladies, one of the Ordinary Meetings for miscellaneous purposes, and the results were again highly satisfactory.

In the month of November the members and their friends had an opportunity of inspecting together the various collections of Mr. Mayer, by the special invitation of that gentleman, and those who were present will long remember the agreeable and instructive evening which they spent.

In accordance with the directions of the Society, the Council made arrangements for receiving the Archæological Institute of Great Britain and Ireland at Liverpool, during the week of its meeting at Chester. Their visit took place on Saturday the 25th of July, and they were met by the whole Society at a Conversazione in the Town Hall. The apartments and lights were granted by His Worship the Mayor, Vice-President *ex officio*.

The laying of the foundation stone of the Free Public Library and Museum, appeared to be a fitting occasion for a learned Society of the district to express its views on the subject. For this purpose the President and members attended at the Town Hall, and

presented an Address to William Brown, Esq. They had the further gratification of seeing that the announcement of their intention had induced other public bodies to follow their example.

The Annual Excursion during the past summer was to the Art Treasures' Exhibition at Manchester. A brief notice of the proceedings on that occasion, and of the other Special General Meetings, will be found in the Appendix to Volume IX.

The Council feel it their duty to put upon record, an expression of the very efficient manner in which Mr. Rundell has discharged the duties of Assistant Secretary. He has however found, that a continued attention to them would interfere with his convenience, and closes his labours this evening. In these circumstances the Council have appointed as his successor Mr. J. H. Genn.

The gentlemen who have been nominated to take the places of those who retire, have all shewn great interest in the business of the Society, and are ready to undertake such duties as you may confide to them.

It was then moved by P. R. M'Quie, Esq., seconded by W. L. Stroud, Esq., and resolved unanimously:—

> That the Report now read be adopted, and printed and circulated with the Proceedings of the Society.

The following Statement of Accounts by the Treasurer having been read,

It was moved by David Buxton, Esq., seconded by G. Mansfield Browne, Esq., and resolved unanimously:—

> That the Treasurer's Statement of Accounts be passed, and printed and circulated with the Proceedings of the Society.

The Historic Society of Lancashire and Cheshire, *in Account with* Thomas Avison, *Treasurer.*

Dr.

		£ s. d.
The Volumes:—		
Printing part of vol. viii..	£1 16 0	
Printing & binding vol. ix.	143 1 0	
Lithographing.....	22 13 6	
		167 10 6
Sessional Expenses:—		
Printing circulars, prospectuses, &c.....	10 11 6	
Stationery.....	0 14 5	
Insurance, gas, rent and taxes	18 19 11	
Accommodation at meetings.....	15 15 0	
Refreshments at meetings, including conversazione at Town Hall	62 13 6	
Advertising meetings, &c.	3 6 7	
Assistant Secretary	50 0 0	
Commission, making up accounts, &c.	20 15 4	
Postages, parcels, and miscellaneous	20 18 9	
		203 15 0
Permanent Charges:—		
Printing circulars, &c.....	16 5 0	
Binding books for library..	6 16 10	
Joiners' work at library ..	3 18 0	
Envelopes.....	5 18 0	
Umbrella stand	0 6 6	
Mr. Eyes, for maps, &c., purchased.....	5 7 6	
		38 11 10
Special Expenses:		32 10 3
Balance in Treasurer's hands.....		14 5 11
		£456 13 6

Cr.

	£ s. d.
Balance from last account	39 1.
Receipts, Session ix:—	
Arrears	22 1
Entrance fees, Session ix.	49
Annual subscriptions, do.	257 9
Do. do. x.	4 14
Do. do. xi.	1 11
Life compositions	63
Books sold	19 14
Donation from C. W. Atkinson, Esq.	5 5
	£456 13 6

Examined by
Peter R. M'Quie, } Auditors.
Samuel Gath, }

(E.E.)
Liverpool, 19th October, 1857.
Thomas Avison.

It was moved by A. J. Mott, Esq., seconded by Thomas Dawson, Esq., and resolved unanimously:—

That the thanks of the Society be given to the Officers and Sectional Members of Council, for their services during the past session.

It was moved by P. Macintyre, M.D., seconded by Joseph Boult, Esq., and resolved unanimously:—

That the thanks of the Society be given to the British Association for the Advancement of Science, and to all others who contributed to the illustration of the volume.

It was moved by the Rev. Thomas Moore, M.A., seconded by the Rev. A. Hume, D.C.L., and resolved unanimously:—

That the best thanks of the Society be given to Mr. Mayer, for the reception which he gave to the members and their friends at his Museum in November last; also to the Worshipful the Mayor of Liverpool, for his ready assistance in the Conversazione of the 25th of July.

A ballot having been taken for the Officers and Sectional Members of Council, the result was announced from the chair. (See page vi.)

Thanks were then conveyed by acclamation to the chairman, for his services during the evening, on the motion of Dr. Hume, seconded by William Burke, Esq.

5th November, 1857. ARCHÆOLOGICAL SECTION.

J. T. Danson, F.S.S., V.P., in the Chair.

The following donations were presented:—

From the Society. Proceedings of the Society of Antiquaries of Scotland, vol. ii, part i, 4to.

From the Society. Bulletin de la Société Archéologique de l'Orléanais, No. 25.

From the Society. Proceedings and Papers of the Kilkenny and South East of Ireland Archæological Society, (N.S.) vol. i, No. 8.

From the Institute. The Archæological Journal, No. 53, March, 1857.

From the Author. Collectanea Antiqua, by Charles Roach Smith, F.S.A., vol. v, part i.

From the Author. "The Irish, who are they?" by B. Donbavand.

From the Author. Two Lectures on the Lancashire Dialect, by the Rev. W. Gaskell, M.A.

From the Author. Two Essays on Spinning and Weaving, with Incidental Notices of Allied Subjects; illustrative specimens; and a Poem, by the Rev. A. Hume, D.C.L.

The following objects of interest were exhibited:—

By the Rev. Dr. Hume. (1) A triturating stone, used before hand-mills were employed, and still in use in Central America and South Africa. (2) The lower stone, or "ass" of a quern. (3) The upper stone, or "rider" of another. (4) A coloured lithograph, shewing two Highland women at work at the quern. Dr. Hume mentioned that these stones had been presented to him by Mr. Welsh of Dromore, in the north of Ireland, a gentleman who possesses a large collection of primitive stone implements.

The following Paper was then read:—

Our Mother Tongue in our Father Land,* *by David Buxton, M.R.S.L.*

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* Transactions, p. 37.

12*th November*, 1857. LITERARY SECTION.

H. A. Bright, B.A., in the Chair.

The minutes of the last meeting were read and confirmed.

The following donations were presented:—

From the Society. The Quarterly Journal of the Geological Society, No. November 1st, 1857.

From the Society. Journal of the Statistical Society, vol. xx, part 2; Ex Fellows of the Statistical Society.

From the Society. Proceedings of the Liverpool Architectural and Archæolog Society, vol. iii, part 3.

From the Author. Annals of the Wars of the 18th Century, by Major-Gener Hon. Sir Edward Cust, D.C.L., President of the Society, vol. L

From the Author. Essay on Ships' Compasses, by Thomas Allan, Esq.

From the Author. Remarks on the Mechanical Structure of the Cotton Plan Gilbert J. French, Esq.

From the Author. The Liverpool Guide, by James Stonehouse, Esq.

By Exchange. (Mr. Herdman.) Ancient Liverpool, (N.S.) part iv.

The following objects of interest were exhibited:—

By the Chairman. An autograph letter of the late Rajah Rammohun Roy; also translation of the "Creed of the Ancient Brahmins," published in 1833.

By the Rev. Dr. Hume. A Hindoo schoolmaster's pen—a simple reed—varnished and ornamented with a spiral strip of gilt paper. Also a portion of an Ethnological Map of the County Down: it will contain, when complete, surnames in the county, laid down in the localities in which they are respectively prevalent.

The following Paper was then read:—

On the Importance of the Study of the English Language, especially in connection with comparative Grammar, *by the Rev. A. Hume, D.C.L.*

19*th November*, 1857. SCIENTIFIC SECTION.

P. R. M'Quie, Esq., in the Chair.

The minutes of the last meeting were read and confirmed.

The following donations were presented:—

From the Society. Proceedings of the Royal Geographical Society of London No. 8, March, 1857.

From the Society. Journal of the Geological Society of Dublin, vol. vii, part 4, 1857.

From the Society. Quarterly Journal of the Geological Society, vol. xiii, part 2, No. 50, May, 1857.

From the Author. "Lord Palmerston and the Isthmus of Suez Canal," by D. A. Lange, 1857.

From W. H. Grimmer, Esq., through Mr. Buxton. The names of the Roman Catholics, Non-Jurors and others who refused to take the oaths to His late

Majesty King George, with their Titles, Additions, and Places of Abode, &c., taken from an original MS. of a gentleman who was the principal clerk to the Accountant-General's office. Now first published with a generous view to promote and serve the true Protestant interest of these kingdoms, 1 vol. London, 1745.

The following objects of interest were exhibited:—

By the Rev. Thomas Moore, M.A. An ethnological map, by the Rev. Dr. Hume, giving the arrangement of surnames in the county of Antrim, accompanied by a descriptive article, published in a recent number of the Ulster Journal of Archæology. Also an Ethiopian spoon, carved with a pocket-knife, and a primitive object in bronze, the use of which is unknown. By some it is supposed to have been one of several studs upon a shield; by others to have been an article of horse-furniture, in connection with the bit of a bridle.

The following Paper was then read:—

ICEBERGS IN THE SOUTHERN OCEAN,* *by J. T. Towson, F.R.G.S.*

3rd December, 1857. ARCHÆOLOGICAL SECTION.

JAMES KENDRICK, M.D., in the Chair.

The minutes of the last meeting were read and confirmed.

The following gentlemen were duly elected members of the Society:—

Percival Berry, 7, Union court.
Charles Henry Chadburn, 71, Lord street.
William Fairbairn, F.R.S., President of the Manchester Literary and Philosophical Society, Manchester.
Rev. R. W. Gleadowe, M.A., Neston Vicarage, Cheshire.
Rev. Francis Grosvenor, B.A., St. John's, Chester.
William Moult, 21, Leigh street, and Knowsley.
Rev. Richard R. Moore, B.A., 28, Rupert lane, Everton.
Frederick Oxley, 21, Acre terrace, Everton.
Hugh Shimmin, 21, North John street.

The following donations were presented:—

From John Gray Bell, Esq., Manchester. A collection of thirteen gutta percha casts of seals, from documents in the donor's possession.

From the Society. Transactions of the Surrey Archæological Society, 1854–5, vol. i, part 1.

From the Society. Bulletin de la Société Archéologique de l'Orléanais, No. 26.

From the Society. Proceedings and Papers of the Kilkenny and South East of Ireland Archæological Society, vol. i, No. 9.

From the Society. Journal of the Architectural, Archæological and Historic Society of the County and City of Chester, part iv.

From the Society. Transactions of the Ossianic Society, 1855, vol. iii.

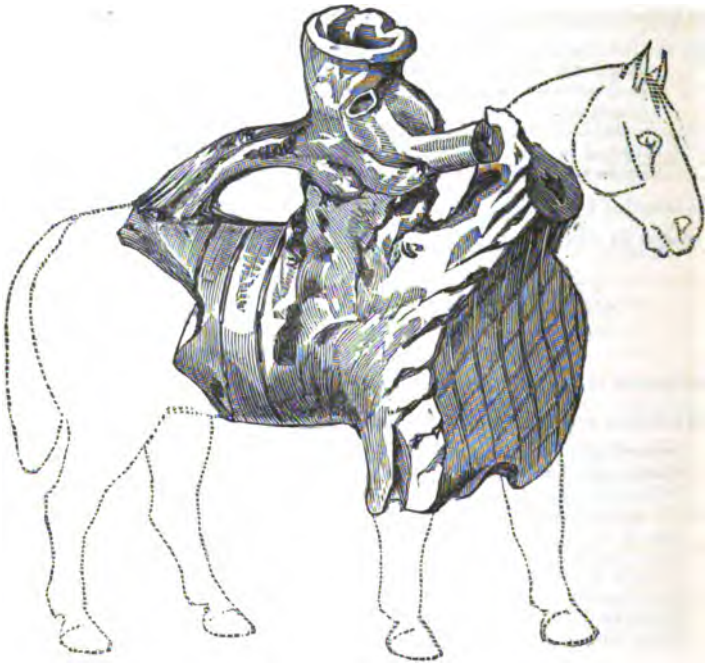
From James Boardman, Esq. A copy of the pedigree of the family of Greenhalgh of Brandlesome, Lancashire.

The following objects of interest were exhibited:—

By the Chairman. Two early British torques of gold; fragments of a torque and

* Transactions, p. 239.

bracelet of electrum, and of three horses' bits in bronze, all found in Lincolnshire; also an equestrian figure of a knight, in brass, used as a vessel for holding liquids, probably of the latter part of the twelfth century; a fragment of a green glazed earthenware equestrian figure, used for the same purpose,



probably of the early part of the twelfth century, dug up in the church yard of Winwick, Lancashire, and now in the Warrington Museum. He also exhibited a fragment of a similar vessel dug up in Warrington, of about the same probable date as the previous specimen; and a large bronze celt and ring, recently found at Warrington Junction, on the Liverpool and Manchester Railway.

Three beautifully-executed coloured drawings of the more remarkable of the foregoing objects, were likewise exhibited by Dr. Kendrick.

By R. W. Anderson, Esq. A volume dated 1787, called "The Cabinet of Genius," containing various poems popular in the last century, profusely illustrated with engravings in aqua-tint.

The Chairman announced that the Warrington Free Library and Museum was now open, and invited members of this Society visiting that town to inspect it.

The following Paper was then read:—

DESCRIPTION OF SOME ANTIQUITIES FROM MACON, IN THE SOUTH OF FRANCE,* *by Mr. H. Ecroyd Smith.*

* Transactions, p. 165.

10*th December*, 1857. LITERARY SECTION.

J. T. Danson, F.S.S., V.P., in the Chair.

The minutes of the last meeting were read and confirmed.

The following gentlemen were duly elected members of the Society:—

Rev. William Calder, M.A., Fairfield.
Benjamin Donbavand, 5, Chatsworth street, Edge Hill.
Thomas S. Hancock, Birkenhead.
John R. Hughes, Laverock bank, Toxteth Park.
Major Egerton Leigh, High Leigh, Warrington.
Rev. Canon James Slade, M.A., West Kirby, Cheshire.
William Wardell, Abbotsfield, Chester.

The following donations were presented:—

From the Society. Transactions of the Liverpool Chemists' Association, for 1856-7.

From the Society. Journal of the Statistical Society of London, vol. xx, part 3.

From the Author. Report on the Establishment and present Condition of the Liverpool Public Baths and Wash-houses, by James Newlands, C.E., Borough Engineer, 1856.

From the Author. On the Banners of the Bayeux Tapestry, by Gilbert J. French, Esq.

From Joseph Mayer, Esq. Catalogue of Assyrian and other Antiquities formed by B. Hertz, now in the donor's possession.

By Exchange. (Mr. Herdman.) Ancient Liverpool, (N.S.) part v.

The following objects of interest were exhibited:—

By D. Buxton, Esq. An early edition of "Essays and Counsels, Civil and Moral, "of Sir Francis Bacon, enlarged by the Honourable Author himself." London, 1668.

"A Help to English History, &c." By P. Heylin, D.D. London, 1674.

An illustrated Vocabulary for the use of the Deaf and Dumb. London, 1857.

By the Council. Hardwick's Illustrated History of Preston.

The following Paper was then read:—

On the Population of Lancashire and Cheshire, and its Local Distribution during the Fifty Years 1801–51,* *by J. T. Danson, F.S.S., V.P., and T. A. Welton, F.S.S.*

17*th December*, 1857. SCIENTIFIC SECTION.

James Strains, Esq., in the Chair.

The minutes of the last meeting were read and confirmed.

The following gentlemen were duly elected members of the Society:—

Thomas Darnley Anderson, 5, India buildings, Water street, and West Dingle, Toxteth Park.
Thomas Bradley, Bold street, and 18, Kenyon terrace, Birkenhead.
William Gibson Bradley, Bold street, and 18, Kenyon terrace, Birkenhead.

* Transactions, p. 1.

Rev. W. H. Coates, West Kirby, Cheshire.
Ivie Mackie, Mayor of Manchester.
Sir James Watts, late Mayor of Manchester.

The following donations were presented :—

From the Society. Report of the Proceedings of the Geological and Polytechnic Society of the West Riding of Yorkshire, 1856–57.

From the Author. Inquiry into the Opinions of the Commercial Classes of Great Britain on the Suez Ship Canal, by Ferdinand de Lesseps.

From the Society. Proceedings of the Royal Geographical Society of London, parts 9 and 10, 1857.

From the Society. Monthly Notices of the Royal Astronomical Society, from November, 1855, to July, 1856, vol. xvi; Memoir of *ditto*, half vol. xxv, 1855–56.

The following objects of interest were exhibited :—

By Mr. Bean. Eighty-five species of rare British plants, collected and arranged by himself.

By Mr. Gregson. A specimen of the *Hellopobus hispidus*, captured by Mr. Reading of Plymouth; a box of *Tineidæ* illustrative of his Paper; and a drawer of *Coleoptera* from his cabinet.

The following Paper was then read :—

On the Lepidoptera of the Liverpool District, part iv,* *by Mr. Charles Stuart Gregson.*

7th January, 1858. ARCHÆOLOGICAL SECTION.

P. R. M'Quin, Esq., in the Chair.

The minutes of the last meeting were read and confirmed.

The following gentlemen were duly elected members of the Society :—

Charles Batten, 87, Lord street, and 74, Chatham street.
Wilbraham Egerton, Rostherne Hall, Knutsford.
Meadows Frost, Exchange alley West, and Chester.

The following donations were presented :—

From the Society. Mémoires de la Société des Antiquaires de Picardie, second series, vol. iv. 1856; Documents Inédits, vols. iii and iv, 1855-56; *Bulletins*, 1854, No. 2; 1855, Nos. 1, 2, 3; 1856, Nos. 1, 2, 3, 4; 1857, Nos. 1, 2.

From the Society. Report to and Proceedings of the Cambridge Antiquarian Society, No. 7, May, 1857.

From the Society. Proceedings and Papers of the Kilkenny and South East of Ireland Archæological Society, vol. i, (N.S.) No. 10.

From the Society. Plates viii and ix (omitted,) for insertion in vol. vii, part 4, of the Journal of the Geological Society of Dublin.

From Edward Heath, Esq., V.P. A variety of pamphlets, comprising

The Liverpool Magazine, Nos. 1, 2, 3.
Financial Reform Tracts, Nos. 17, 18, 19, 20, 21 (N.S.).

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* Transactions, p. 113.

Town Dues and Currency. By John Finch, Merchant.
Report on Town Improvements, 1853; &c.

The following objects of interest were exhibited:—

By Mr. Burke. A snuff-box, made from the oak which formed part of the original foundations of the old Stockwell Bridge at Glasgow, built by Bishop Rae about 1345, in the reign of King David, son of Robert the Bruce; taken down 1850.

By Mr. Oxley. A copy of Lily's Christian Astrology, 1647.

By Mr. A. Craig Gibson. A copy of an advertisement, dated 1787, by John Dalton the philosopher and his brother, announcing their intention to open a boarding school in Kendal.

The following Paper was then read:—

On Ancient Customs and Superstitions in Cumberland,* *by A. Craig Gibson, Esq.*

14th January, 1858. LITERARY SECTION.

J. T. Danson, F.S.S., V.P., in the Chair.

The minutes of the last meeting were read and confirmed.

The following donations were presented:—

From the Author. Annals of the Wars of the 18th Century, vol. ii, by the Hon. Sir Edward Cust, D.C.L., Major-General in the British Army.

From Joseph Boult, Esq. Cobbett's Parliamentary Debates, 1806. Notices of the Cholera Morbus, 1831. Inquiry into the Origin of the Liverpool Town Dues, 1857. Right of the Bishops to sit and vote in the House of Peers, 1833. Address to the Addressers, by T. Paine, 1792. Journal kept in the British Army, from the landing of the troops under command of Earl Moira at Ostend, in June 1794, to their return to England the following year: Liverpool, 1796. Correspondence between Sir Robert Wilson and the Duke of York and the Electors of Southwark: London, 1821. Letter to the Right Hon. Spencer Percival on the return of Lord Melville to power, 1810. Address of President Jefferson on his Election, 1801. Household Suffrage, by the Editors of the Leeds Mercury, 1841. Brief Notes on Dr. Arnold's "Principles "of Church Reform," by Lant Carpenter, LL.D. Catalogue of the Liverpool Medical Library, 1823.

From Mr. T. T. Wilkinson, Burnley. The Lady's and Gentleman's Diary for 1858.

From Mr. George Jones, of London, through Mr. Boardman. Etching of an ancient house in Blackwall, said to have been the residence of Sir Walter Raleigh.

From Mr. James Boardman. Engraving of a monument to Nelson, near Knotty Ash road, Old Swan.

From Mr. Hamilton Williams, Croft Vicarage, Boston. Copy of the Croft Brass.

From the Rev. John Sansom, B.A., Vicar of Buslingthorpe. Copy of the Buslingthorpe Brass.

The following objects of interest were exhibited:—

By Mr. T. Sansom. The Greenock News-Clout, Nos. 9 and 15; a news-letter printed on calico in 1848, with the object of escaping the stamp duty on News-papers.

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* Transactions, p. 97.

The Queen's Matrimonial Ladder; a pen and ink copy from the original publication by Hone, illustrated by George Cruikshank, 1820.

By Mr. Burke. A copy of a Glasgow edition of Hudibras, with illustrations by Martin, 1747. A copy of a London edition of the same poem, "with cuts "by Mr. Hogarth," 1761. A copy of Kirke White's "Remains," including the third volume, little known. "The Pitman's Pay and other Poems," in the dialect of the Newcastle colliers, by Thomas Wilson, 1843. The Poetical Works of Thomson, before the corrections suggested by Pope, 1738. The first fifteen and part of the sixteenth Books of Euclid: Frankfort, 1607.

By Mr. Donbavand. Seven engravings produced in America, five by native artists, and two by Mr. Alfred Jones, formerly of Liverpool.

By Dr. Macintyre. Two Saxon Coins of the reign of King Edgar, found at Chester in 1857.

The following Papers were then read:—

AZIMUTH CARD FOR THE LATITUDE OF LIVERPOOL,* *by Mr. W. W. Rundell.*

NOTES ON THE BUSLINGTHORPE BRASS,† *by the Rev. John Sansom, B.A.*, and

THE ROMAN OCCUPATION OF LANCASHIRE AND CHESHIRE, *by Thomas Baines, F.S.A.*

21*st January*, 1858. SCIENTIFIC SECTION.

THOMAS SANSOM, A.L.S., in the Chair.

The minutes of the last meeting were read and confirmed.

The following donations were presented:—

From the Society. Proceedings of the Royal Society, Nos. 26 and 27.

From the Society. Proceedings of the Royal Geographical Society, No. 11.

From the Society. Proceedings of the Royal Society of Edinburgh, vol. iii; Transactions, vol. xxi.

From the Committee. First and Second Reports of the Liverpool Compass Committee, 1855–56.

The following objects of interest were exhibited:—

By Mr. James Boardman. A £1 note of 1804.

By the Chairman. A collection of sea-weeds from Pembrokeshire.

By Mr. Potter, through Mr. Burke. A piece of insulated wire, discovered by Capt. C. S. Knight amongst the rocks below Kertch, when the allies took possession of the forts and city. One end was attached to a galvanic battery; the other was cut away and lost. It is believed to have been used for firing infernal machines. Also, a piece of the Atlantic Telegraph Cable, to shew the difference in the manufactures.

By Mr. Donbavand. A specimen of copper ore from Alderley Edge, Cheshire, found in the *new* red sandstone. It is supposed that no specimen is to be found elsewhere in Great Britain in the same stone. Also a piece of copper ore from the *old* red sandstone, Ireland.

The following Paper was then read:—

ON THE FLORA OF PRESTON AND ITS NEIGHBOURHOOD,‡ *by Mr. C. J. Ashfield.*

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* Transactions, p. 111. † Transactions, p. 203. ‡ Transactions, p. 143.

4th February, 1858. ARCHÆOLOGICAL SECTION.

PETER R. M'QUIE, Esq., in the Chair.

The minutes of the last meeting were read and confirmed.

The following donations were presented:—

From the State Historical Society of Wisconsin, U.S.A. The History of the State of Wisconsin; vol. i, Historical; vol. iii, Documentary.

From the Society of Antiquaries, London. Archæologia; or, Miscellaneous Tracts relating to Antiquity, vol. xxxvi, part 2; vol. xxxvii, part 1. Proceedings of the Society, Nos. 43, 44, 45, 46. Lists of Fellows for 1856–57.

From the Society. Original Papers, published under the direction of the Norfolk and Norwich Archæological Society, vol. v, part 2.

From the Editor. The Archæological Mine, edited by A. J. Dunkin, Esq., part 36.

From Hugh Neill, Esq., Liverpool. Address to the Graduates of the Medical Department of Pennsylvania College, 1857, by Alfred Stillé, M.D. The Unity of Medicine, 1856, by the same. Annual Announcement of the Medical Department of Pennsylvania College, Philadelphia, Session 1857–58. Report of the Board of Managers of ditto, 1856. Report of the Pennsylvania Hospital for the Insane, by Thomas Kirkbride, M.D., 1856. A Discourse, reviewing a ministry of fifty years, by the Rev. W. Neill, D.D., Philadelphia, 1857. A Tribute to the principles, virtues, habits and public usefulness of the Irish and Scotch Early Settlers of Pennsylvania. By a Descendant, 1856.

From David Lamb, Esq. The Athenæum for 1857.

From Joseph Mayer, F.S.A. A volume of vocabularies, illustrating the condition and manners of our forefathers, as well as the history of the forms of elementary education and of the languages spoken in this island from the tenth century to the fifteenth: edited from MSS. in public and private collections, by Thomas Wright, M.A., F.S.A., &c., 1857; being the first of a series Mr. Mayer is about to publish on English Antiquities.

From the Authors, through Mr. Hughes. On Wrought Iron in large masses, by William Clay, Esq., Liverpool, 1857. The British Kymry; or Britons of Cambria, by the Rev. R. W. Morgan, P.C., Tregynon.

The following objects of interest were exhibited:—

By Joseph Mayer, F.S.A. The hand of a female mummy, remarkable from having

four rings on the fingers; one of plain gold, with a trumpet-shaped head, on the little finger; a scarabæus of lapis-lazuli, with a gold shank, on the third; and on the middle and fore fingers two very large obelisks, the shafts formed of lapis-lazuli, the apex of each being of plain gold, and the bases of the same, but delicately worked with filagree. These are the only specimens of obelisk-rings hitherto discovered. Also, a waistband which was wrapped round the body of the mummy seven times; it is about six inches broad at one end, tapering gradually to about two inches wide at the other, and is finished by the ends of the threads being tied into an ornamental plait. The material is cotton, and the pattern of the weaving extremely beautiful, being

Publications of Learned Societies, and Periodicals, in the Library of the Smithsonian Institution, parts 1 and 2.

By Exchange. (Mr. Herdman.) Ancient Liverpool, (N.S.) part vi.

From the Society. Proceedings of the Literary and Philosophical Society of Liverpool, 1857.

From the Society. Journal of the Statistical Society, vol. xx, part 4.

From the Rev. Dr. Hume. Documents connected with the Public Banquet given to William Brown, Esq., M.P., at St. George's Hall, Liverpool, on the 15th of April, 1857. Documents and Proceedings connected with the donation of a Free Public Library and Museum by William Brown, Esq., M.P., to the Town of Liverpool.

From the Author. The Parochial System; and the Clerical Year: by a Lancashire Incumbent.

From the Author. On the Marriage and Intermarriage of the Deaf and Dumb, by David Buxton, M.R.S.L.

The following objects of interest were exhibited:—

By the Chairman. A volume containing ten Tracts, including a Report of Sacheverell's Trial, dated 1710, &c., and bearing the autograph signature and notes of H.R.H. the late Duke of Sussex.

By James Boardman, Esq A copy of the *breeches* Bible, 1599. London.

By the Rev. R. Brook Aspland, M.A. An interleaved Bible, containing many MS. notes, made in the 17th century, by John and Samuel Angier, Dukinfield. The oath of allegiance proved to be non-obliging. And, The Quakers Confuted. By Samuel Eaton, Teacher of the Church of Christ at Dukinfield. The Haven of Health. By Thomas Coque of Dukinfield. London, 1596.

The following Paper was then read:—

DUKINFIELD, A CHESHIRE VILLAGE IN THE OLDEN TIME, *by the Rev. R. Brook Aspland, M.A.*

18*th February*, 1858. SCIENTIFIC SECTION.

DAVID BUXTON, M.R.S.L., in the Chair.

The minutes of the last meeting were read and confirmed.

Henry Thompson, 151, Upper Parliament street, and 11, North John street, was duly elected a member of the Society.

The following donations were presented:—

From the Society. Memoirs of the Literary and Philosophical Society of Manchester, (N.S.,) vol. xv. Dalton's Meteorology, 1 vol., and New System of Chemistry, part 1, vols. i and ii.

From the Society. Quarterly Journal of the Geological Society, vol. xiii No. 51.

From the Society. Proceedings of the Royal Society, vol. ix, No. 28.

From the Author. Two Essays, extracted from the Philosophical Transactions, by the Rev. T. P. Kirkman, A.M., F.R.S.

From the Author. Plan of a Breakwater for improving the Port and Harbour of Liverpool, by George Rennie, C.E., F.R.S.

From the Society. Journal of the Society of Arts, vols. iv and v; vol. vi, Nos. 261 to 273.

From R. C. Carrington, Esq., Redhill Observatory. A catalogue of 3735 circ[illegible] polar stars, printed at the public expense, by order of the Lords [illegible] Admiralty. Also, ten charts of circumpolar stars.

From John Williams, Esq., Assistant Secretary to the Royal Astronomical Soc[illegible] Two beautiful engravings of Saturn and Jupiter, as seen through a [illegible] equatorial.

From Mr. Boardman. Roscoe's Poem on the Dingle.

The following objects of interest were exhibited:—

By Mr. Hancock. A MS. of John Locke.

By Mr. Guyton. A locust found near Liverpool.

By Mr. T. Comber. A book, partially eaten by the Brazilian white ant.

By Mr. Donbavand. Three letters of the late Richard Robert Jones, the W[illegible] linguist.

By Mr. Gregson. Specimens of Coleopters from his own collection.

By Mr. T. Sansom. Leeuwenhoek's *Arcana Naturæ*.

By Mr. Boardman. A copy of Brindley's Plan of his proposed Canal to unite [illegible] Trent and Mersey.

By Mr. T. J. Moore. Specimens from the Liverpool Free Public Museum [illegible] horns, shells, &c. of animals, (some of which are extinct,) discovered in [illegible] excavations at Wallasey for the Birkenhead new docks; exhibited by [illegible] the Library and Museum Committee of the Town Council.

The following Papers were then read:—

On the Dipterous Insects of the District around Liverpool,* *by the Re[illegible] H. H. Higgins, M.A.*

On the Microscope as Applied to Natural History,† *by Thomas Sa[illegible] A.L.S., F.B.S.E.*

Notice of Mammalian Remains Discovered in the Excavations at Wallas[illegible] for the Birkenhead New Docks,‡ *by Mr. Thomas J. Moore, Keeper of the De[illegible] Museum, Liverpool.*

4th March, 1858. ARCHÆOLOGICAL SECTION.

Peter R. M'Quin, Esq., in the Chair.

The minutes of the last meeting were read and confirmed.

The Lord Lindsay, of Haigh Hall, was duly elected a member of the Society.

The following donations were presented:—

From the Archæological Institute. The Archæological Journal, No. 54, 1857.

From the Society. Proceedings and Papers of the Kilkenny and South-East [illegible] Ireland Archæological Society, vol. i, (N.S.,) Nos. 11 and 12.

From the Society. Bulletin de la Société Archéologique de l'Orléanais, No. 2[illegible] 1857.

From the Society. Transactions of the Wisconsin State Agricultural Society, [illegible] 1852–53.

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* Transactions, p. 199. † Transactions, p. 255. ‡ Transactions, p. 265.

From the Author. The Law of Treasure-Trove, by A. H. Rhind, Esq.

By Exchange. (Mr. Herdman.) Ancient Liverpool, (N.S.,) part vii.

The following objects of interest were exhibited:—

By the Chairman. Hollingworth, his Chronicle of Manchester.

By Mr. Mayer. A superb royal quarto volume, containing plans and descriptions of the recent improvements in the Castle of Alnwick, and illustrations of the more interesting features of the Castles of Prudhoe and Wardour; the gift to the exhibitor of His Grace the Duke of Northumberland.

A medal struck by Wyon in commemoration of the marriage of the Princess Royal with Prince Frederick William of Prussia.

A series of sketches of glass vases. A large vase of terra-cotta, (black clay,) subject, dogs pursuing hares, the animals in high relief; it is a specimen of the article usually called Rhine-ware. A large bronze lamp; a long chain of bronze set with glass beads; several surgical instruments; fibulæ; a torque; and other objects, whose use is not now known. The whole of the above were found in graves near the Roman Station called *Mars-field*, at Cologne.

By Dr. Macintyre. Orthodox Paradoxes. By Ralph Venning, 1657.

The Glory of their Times; or, the Lives of the Primitive Fathers, 1640.

Antiquities of Sefton Church, by R. Bridges.

A large quarto volume of fac-similes of autograph letters of distinguished persons of various times and countries, published at Stuttgart in 1846.

Billing's Liverpool Advertiser, 21st October, 1805; and other local newspapers of about the same date.

Several silver coins in fine preservation, and of high antiquity, including a tetradrachm of Philip ii. of Macedon, about 340 B.C.; a didrachm of Tarentum, about 200 B.C.; and a tetradrachm of Athens of an early date.

A piece of one of the old windows of Sefton Church, remarkable for having two coats of arms cut out of the enamel with which the panes are coloured.

A curious emblematic medal in lead, date 1458; and one of the Emperor Charles V, in the same material.

By Mr. H. Ecroyd Smith. A personal seal in pewter, probably of the 14th century, inscribed "Willi de Meles," found at high-water mark near the village of Great Meols.

A buckle of the 17th century, found on Hilbre Island.

By John Peacock, Esq., Chester. Specimens of mediæval pottery, consisting of two tigs or drinking-cups, one of a rare type, having six handles, of Elizabethan black-ware, the other of the usual yellow-ware; three unguent pots; a large-sized olla; the neck of a vessel of pale yellow-coloured Roman ware; and a piece of Samian ware. Also, three fibulæ; two coins of Tetricus, one junior, the other senior; a coin of Crispina in brass; a brass of Victorinus, and another of Constantine. All the above were discovered during some excavations now making in Eastgate street, Chester.

On the suggestion of Mr. Towson, a Committee was appointed to make arrangements with one of the Railway Companies. to enable members to proceed to some convenient station for witnessing the Eclipse on Monday, the 15th instant.

The following Paper was then read:—

FURTHER REMARKS ON THE HISTORY OF THE TWO COUNTIES, AND ITS MATERIALS,* *by John Robson, M.D.*

* Proceedings, p. 47.

11th *March*, 1858. LITERARY SECTION.

JOSEPH MAYER, F.S.A., &c., in the Chair.

The minutes of the Special General† and Ordinary Meetings of the 4th instant were read and confirmed.

The following donations were presented:—

From the Society. Journal of the Statistical Society of London, vol. xxi, part [illegible].

From the Author. An Essay on the Beneficent Distribution of the Sense of Fear. By G. A. Rowell.

From the Liverpool Watch Committee. Report on the Police Establishment and State of Crime in Liverpool, for the year ending 29th September, 1857.

From the State Historical Society of Wisconsin, U.S.A. The Madison Directory, 1855. The Milwaukie Directory, 1856-57. Map of Milwaukie in [illegible]. Township Map of the State of Wisconsin. Map of Madison and the Four Lake Country. Plan of ditto. First Annual Report of the Executive Committee of the Society, 1855. Second Annual Report and Collections of the Society, vol. ii, 1855. Annual Report of the Geological Survey of Wisconsin, 1856. Also, various pamphlets descriptive of the more important towns and institutions of the State of Wisconsin.

From the Author. The Manchester Hand-book. By Joseph Perrin.

From the Author. A comparative table of the principal schemes for the classification of libraries and of human knowledge generally. By Edward Edwards.

From C. Roach Smith, F.S.A., &c. Thornberg's Cufic Coins. Upsala, 1848.

From Hugh Neill, Esq. A map of the course of the eclipse of the 15th instant, prepared by the Royal Astronomical Society.

From the Author. The Stream of Time; a chronological chart of Universal History. By William Bell, Ph.D.

The following objects of interest were exhibited:—

By Mr. Donbavand. Specimens of bog iron ore, in four stages of progress: first, in the form of brown oxyde, in decomposing mica rock; secondly, as an alluvial deposit, that is, as a clay-like deposition from water; thirdly, the same in another state of oxydation, and become somewhat granulated; fourthly, as compact bog ore. In the third stage the oxyde is employed as a dye by the people who live on bogs in which it occurs.

By Mr. Albert J. Mott. Essay on Man, first part, first edition. The copy used by Pope himself, with his autograph corrections for the second edition, containing the two "memorable alterations" spoken of by Johnson.

The original MS. of Johnson's Life of Pope, with early illustrative engravings and autograph letters, &c.

An original portrait of Dr. Johnson, not engraved, supposed to be by Ozias Humphrey, R.A.

Le vite degli illustri filosofi de Diogene Laertio. Venice, 1545.

The will and testament of Basil Valentine, with curious mystical engravings. London, 1671.

Of the Nature of Things, &c. By Paracelsus. London, 1650.

By Major-General the Hon. Sir E. Cust, President. An illustrated pedigree of the family of Ireland of Hutt; and one of the family of Whitmore, formerly of Thurstaston Hall.

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† Proceedings, p. 355.

The following Paper was then read :—

NOTES ON THE CLASSIFICATION OF HUMAN KNOWLEDGE, WITH ESPECIAL REFERENCE TO THE METHODS WHICH HAVE BEEN ADOPTED, OR PROPOSED, FOR THE ARRANGEMENT OR CATALOGUING OF LIBRARIES,* *by Edward Edwards, Esq.*

18*th March*, 1858. SCIENTIFIC SECTION.

P. MACINTYRE, M.D., in the Chair.

The minutes of the last meeting were read and confirmed.

The following donations were presented :—

From the Society. Journal of the Society of Arts, vol. vi, Nos. 274 to 277 inclusive.

From the Publisher. The Illustrated Inventor, Newspaper, No. 20.

From the Society. Proceedings of the Royal Society. vol. ix, No. 28.

From the Society. Quarterly Journal of the Geological Society, vol. xiv, part 1, No. 53.

From the Society. Proceedings of the Royal Geographical Society, vol. ii, No. 1.

From the Society. Journal of the Geological Society of Dublin, vol. vii, part 5.

From Charles Corey, Esq., V.P. Liverpool Photographic Society. The Photographic Journal, vols. i, ii, and iii, in one, for 1854–55–56.

From Dr. Macintyre. The Academic, a Liverpool Periodical for the year 1821.

The following objects of interest were exhibited :—

By Mr. Traer. Four human eyes, taken from a cemetery used by the ancient inhabitants at Arica, South America.

By Mr. Forrest. A lens for photographic purposes, by Voigtländer and Son, on Petzwahl's principle.

An American patent solar camera.

A stereoscopic view of Dr. Livingstone's steam launch, photographed by Mr. Glover.

By Charles Corey, Esq. Numerous beautifully-executed specimens of the art of photography.

Several photographic illustrations of Egyptian and Nubian antiquities, taken by Frith, were exhibited, magnified by the hydro-oxygen lens, the subjects being commented on by the Rev. H. H. Higgins, M.A.

The following Papers were then read :—

ON THE SOLAR ECLIPSE OF MARCH 15TH, 1858, AS SEEN AT BURNLEY,† *by T. T. Wilkinson, F.R.A.S.*

ON THE SOLAR ECLIPSE OF MARCH 15TH, 1858, AS SEEN NEAR OXFORD,‡ *by J. T. Towson, F.R.G.S., and T. Sansom, A.L.S.*

A HISTORICAL SKETCH OF PHOTOGRAPHY,‖ *by Charles Corey, Esq.*

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* Transactions, p. 61.
† Transactions, p. 231.
‡ Transactions, p. 233.
‖ Transactions, p. 183.

J. A. Forrest, Lime street.
J. Harding, H.M. Customs.
Charles Jones, Bridge street, Birkenhead.
Daniel Jones, 2, Tarleton street.
J. R. Isaac, Castle street.
W. Keith, 34, Castle street.
H. F. Leithead, H.M. Customs.
H. Lafone, 87, Northumberland terrace, Everton, and 113, Marybone.
J. M'Innes, 21, Neptune street.
N. Mercer, 7, Church street.
J. Newlands, C.E., Public Offices, Cornwallis street.
Joseph Stevens, 166, Park road.
James Eden, Park road.
John Glover, 26, Hanover street.
J. B. Moss, Minshull street.
R. Rathbone, Woodcote, Aigburth.
J. M'Nicoll, Brunswick Saw Mills.
J. N. Sadler, Public Offices, Cornwallis street.
George Thomas, Lord street.
Adam Burgess, 47, South John street.
Rev. F. Lockey, LL.B., Swainswick, Bath.
John Fawcett, Ashton-under-Lyne.
J. P. Taylor, Cockermouth.
J. O. Gulliver, 23, Fishgate street, Swansea.
Thomas Brown, Egremont, near Whitehaven.
C. Fowler, Torquay, Devon.
W. Rowlandson, Kendal.
H. Mawdsley, Southport.
J. Lewthwaite, Hartlepool.
J. Ralstone, Argyle street, Glasgow.
Rev. W. J. E. Rooke, Tunstal Vicarage, Lancaster.
Henry Bath, Swansea.
John Hickson, Stanton-by-Dale, near Landsacre, Derbyshire.

The following donations were presented :—

From the Society. Bulletin de la Société Archéologique de l' Orléanais, No. 28, 1857.

From the Society. Mémoirés de la Société des Antiquaires d l' Ouest, 1856.

From the Society. Proceedings and Papers of the Kilkenny and South-East of Ireland Archæological Society, vol. ii, (N.S.) No. 13.

From the Institute. Journal of the Archæological Institute, No. 56, 1857.

From the Author. Parochial History of Enstone, Co. Oxford, by the Rev. John Jordan, Vicar of Enstone.

From the Editor. A History of Northumberland, containing a General History of the County under the Roman, the Saxon, and the Danish Kings, part i, edited by J. Hodgson Hinde, Esq.

By Exchange. (Mr. Herdman.) Ancient Liverpool, (N.S.) Nos. viii and ix.

From T. T. Wilkinson, F.R.A.S., Burnley. A lucky stone, worn by a Lancashire farmer, being a nodule of flint, with an apparently natural hole through it.

From Mr. James Boardman. Prospectus of the Manx Society for publication of National Documents of the Isle of Man.

From the Society. Programm und Statut des Historischen Vereins für Niedersachsen. Statistik der im königreiche Hannover vorhandenen heidnischen denkmäler. Alphabetisches verzeichniss der bibliothek des Historischen Vereins für Niedersachsen. Sechste nachricht über der Historischen Verein

für Niedersachsen. 7e @ 15e and 17e @ 20e ditto ditto. Urkundenbuch ditto ditto. Archiv, ditto ditto. Zeitschrift, ditto ditto.

The following objects of interest were exhibited:—

By the Council. Memoirs, chiefly illustrative of the History and Antiquities of Northumberland, communicated to the Archæological Institute of Great Britain and Ireland at Newcastle-on-Tyne in August, 1852, 2 vols. 8vo.

By Mr. C. Hardwick, Preston. Two Roman second brass coins; one Nerva, one Hadrian, found at the Roman Station, Walton-le-dale, during the present year.

A Roman second brass of Claudius, procured at, and probably found near, Preston.

By James Kendrick, M.D., Warrington. The upper stone of a large quern, found at Latchford, near Warrington.

An embroidered band and buckle, worn in ladies' hats during part of the last century; and a copy of Raven's thumb almanac, for 1684; the property of Mrs. Pickton, of Warrington.

By Mr. J. R. Hughes. A MS. volume, containing a collection of the genealogies of the Welsh noble families, dating from a very early period.

The following Papers were then read:—

El Sakhra,* *by Major-General the Hon. Sir Edward Cust, D.C.L., President of the Society.*

On Some Runic Inscriptions found in Carlisle Cathedral, *by A. Craig Gibson, Esq.*

Further Discovery of Remains at the Roman Station, Walton-le-Dale, near Preston, *by Charles Hardwick, Esq.*

After enumerating some additional specimens of Roman Pottery, and other remains found at Walton-le-dale, generally resembling those described in his former paper (vol. VIII., p. 127,) Mr. Hardwick says:—

"The most interesting fact in connection with the recent discovery at Walton is the locality in which the remains were deposited. In my previous paper I gave a sketch, from a modern reprint, of a map published in 1738, by Robert Porter. The course of the Ribble appears, on the whole, to be pretty carefully marked, but that of the Darwen has evidently been merely sketched in, and not really surveyed. This is proved to be the case by the Ordnance map, on which the remains of the old channel are depicted from actual measurement.

"The recent excavations were made in Mr. Crozier's garden, about 130 yards south west of the 'plump,' (see vol. VIII., map facing p. 127,) and outside what has hitherto been regarded as the Roman enclosure. It is not improbable that a ditch originally extended from the Darwen to the Ribble in such a direction as would give to the Station the usual form of a Roman Castrum, and include within the natural and artificial trenches all the remains yet discovered.

"The recent discoveries not only confirm the previous evidences of the Roman occupation of Walton, but indicate that occupation to have been of a permanent and important character.

"This fact strengthens the position advanced in my recently published 'History of Preston and its Environs,' that Walton is the site of the Roman Station *Coccium*, and that the route of the tenth Iter of Antoninus passed from Maryport along the coast by Egremont, Muncaster, Dalton, Lancaster, Preston, Wigan and Warrington to Middlewich, and not through the hilly country, as conjectured by the two Whitakers and others."

* Transactions, p. 131.

13*th May*, 1858. LITERARY SECTION.

EDWARD HEATH, Esq., V.P., in the Chair.

The minutes of the last meeting were read and confirmed.

The following donations were presented :—

From T. B. Ryder, Esq. Journal of the Manchester and Liverpool Agricultural Society, containing a *resumé* of the past ten years' proceedings.

From Mr. Charles Hardwick, Preston. Quarterly Magazine of the Independent Order of Odd-Fellows, Manchester Unity, No. vi, April, 1858.

From the Society. Proceedings of the Royal Society, vol. ix, No. 30.

From the Society. Journal of the Society of Arts, Nos. 278 to 285 inclusive.

From Thomas Wright, M.A., F.S.A. Anciens témoignages historiques, relatifs à la Boussole; note lue à la Société de Géographie de Paris dans sa Séance du 19 Février, 1858, par M. D' Avezac, Président de la Commission Centrale.

From the Society. Mémoires de la Société Impériale d' Emulation d' Abbeville, 1852 à 1857, 1 vol.

The following Papers were then read :—

FURTHER MEMORIALS OF THE LATE J. H. SWALE,* *by T. T. Wilkinson, F.R.A.S., &c.*

ON THE GEOLOGY OF THE FYLDE DISTRICT,† *by the Rev. W. Thornber, B.A.*

20*th May*, 1858. SCIENTIFIC SECTION.

MAJOR-GENERAL THE HON. SIR EDWARD CUST, D.C.L., &c., PRESIDENT, in the Chair.

The minutes of the last meeting were read and confirmed.

The following donations were presented :—

From the Royal Dublin Society. Plan of Examinations to be held by the Society, with the view of awarding certificates of merit.

From James Kendrick, M.D., Warrington. On mediæval vessels in the form of knights, pamph.

From the Society. Memoirs, vol. xxvi, and Notices, vol. xvii, of the Royal Astronomical Society.

From the Society. Journal for 1847, and Proceedings, vol. ii, No, 2, of the Royal Geographical Society.

From the Society. Quarterly Journal of the Geological Society, vol. xiv, part 2, No. 54.

From the Society. Proceedings of the Somersetshire Archæological and Natural History Society, for 1856–57.

By Exchange. (Mr. Herdman.) Ancient Liverpool, (N.S.) part x.

From the Author. Substance of two Lectures delivered at Walton-on-the-Hill, entitled "Knowledge; Health and Happiness; Fire and Water." By Henry Johnson, M.R.C.S. Eng.

From the same. Catalogue of the Arundel MSS., 1 vol. 8vo.

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* Transactions, p. 169. † Transactions, p. 187.

From Joseph Mayer, F.S.A. Sur la Construction des Salles dites des Géants. Par S. M. le roi Frédéric VII de Danemark; mémoire lue à la Séance des Antiquaires du Nord, tenue au palais de Christiansborg le 29 Mai, 1857. Pamph.

From Mr. James Boardman. Copy of the Supplement to the "Liverpool Mercury" for the 11th May, 1858, containing a letter from the donor, on the Liverpool Library.

The following objects of interest were exhibited:—

By Joseph Mayer, F.S.A. A male skull, found in the ancient cemetery of Stanley, in Cheshire. It is remarkable for the great amount of animal power, and the smallness of the intellectual regions; also for the extraordinary protuberance of the eyebrows, which hang far over the face, and must have given the man a most forbidding look.

By Thomas Sansom, A.L.S. A number of rare botanical specimens from Brazil.

By Mr. How, (London.) Four specimens, of different sizes, of Voigtländer's orthoscopic lenses, said to be of superior value in photographic operations; with some pictures on iodized wax-paper, taken by the description of lens exhibited.

By the Rev. Dr. Hume. An ecclesiastical and moral chart of the Borough of Liverpool, prepared by him for a Special Committee of the House of Lords, and laid before them on the 14th instant. The basis on which it is constructed is the large and beautiful map recently published by Messrs. Phillip and Son, of South Castle street, containing an area of 32 square feet. Reserving the civil divisions of parish and townships, Dr. Hume shews all the ecclesiastical districts in the borough, indicating every place of religious worship by a distinctive colour. The schools for the education of the poor are indicated in the same way, including those which are not connected with any religious body. By a series of plain symbols, the number and nature of church agents in each district are shown, with certain details respecting each; from lists which were furnished by the relieving officers, all the streets are marked in which out-door relief is currently or specially administered; and similar lists, supplied with equal kindness by the authorities at the central police-office, shew the haunts of crime and immorality. Mr. Crews, of the Coroner's Court, has also furnished a list of the principal scenes of death by violence, for further completing the objects of the chart. A series of contour-lines mark the successive increments of building and population for the last two centuries; and, in a few instances, the migration of churches, chapels and charitable institutions is traced.

The Honorary Secretary announced the gross number of members to be 546, including 31 honorary and *ex officio* members; and that he purposed carrying into effect his previously expressed intention of resigning his office in the Society when the number of members should have reached 500, at the close of the year. This intimation was made to a very numerous assemblage of members, and was received with general expressions of regret.

J. T. Danson, Esq., V.P., remarked on the great value of Dr. Hume's services, and urged the members present to unite in requesting the rev. gentleman to reconsider his intention, which suggestion having been enforced in addresses by Edward Heath, Esq., V.P., and the President, Dr. Hume consented to continue his services for a further period.

The following Paper was then read:—

ON SLAVERY, AS IT EXISTED IN ENGLAND DURING THE SAXON ERA, AND THE SUBSTITUTION OF VILLENAGE AFTER THE NORMAN CONQUEST, UNTIL ITS GRADUAL EXTINCTION,* *by Joseph Wright, Esq.*

* Transactions, p. 207.

APPENDIX.

4th March, 1858. SPECIAL GENERAL MEETING.

REV. THOMAS MOORE, M.A., in the Chair.

The Chairman having read the notice convening the meeting, and stated its objects;—

It was moved by the Rev. Dr. Hume, seconded by Thomas Sansom, A.L.S., and resolved unanimously:—

That this meeting agree to the proposal of Union with the Liverpool Photographic Society on the terms submitted, viz.:—

I.—That the Photographic Society become part of the Historic Society, *i.e.*, that it accept the name and laws of the latter.

II.—That the number of Sections as fixed by the present Laws be not increased; but that communications on Photography be admissible at all the ordinary meetings.

III.—That a Photographic Committee be appointed annually at the commencement of the session, like the committees for Printing, Finance, the Library, &c.

IV.—That it be allowable for the Authors to print Papers on Photography in anticipation of the Annual Volume of Transactions, at the discretion of such Committee.

V.—That the property of the Photographic Society become the property of the Historic Society, and that the members of the Photographic Society be enrolled without Entrance Fee.

VI.—That the Union date from the 31st March, 1858, if the preliminary arrangements be complete by that time.

The alteration of the Law regulating the distribution of the Society's Annual Volume, recommended by the Council, having been discussed; it was moved by the Rev. Dr. Hume, seconded by Albert J. Mott, Esq., and resolved unanimously:—

To omit from the connexion in which they now stand in the sixteenth Section of the Laws, the words "to receive the Society's Publications, or," and to insert after the words "proceedings of the Society," the following sentence—"and no member whose subscription for the current Session is unpaid shall be entitled to receive the Society's publications." *

6th April, 1858. EXTRA MEETING.

CONVERSAZIONE AT THE MUSEUM OF BRITISH AND FOREIGN ANTIQUITIES, COLQUITT STREET.

By the invitation of the proprietor, Joseph Mayer, Esq., F.S.A., an extra meeting was held here, when upwards of four hundred members, and ladies and gentlemen, their friends, attended.

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* Law XVI, in accordance with the above resolution, now provides as follows:—

"From the first day of March in each Session, the Treasurer shall exhibit publicly in the meeting-room a list of the Society, on which shall be marked opposite each member's name, the date when his annual subscription was paid, or the amount of all arrears due. No member, whose subscription is in arrear *for any but the current Session*, shall be entitled to take any part in the proceedings of the Society; and no member, *whose subscription for the current Session is unpaid, shall be entitled to receive the Society's publications.* The Treasurer shall also prepare a complete Statement of Accounts, to be audited at the stated Annual Meeting of the Council."

The company occupied themselves for some time in inspecting the resources of the Museum, and after having partaken of refreshment, provided by the liberality of Mr. Mayer, assembled about nine o'clock in one of the lower rooms, when Mr. Alderman S. Holme proposed a vote of thanks to Mr. Mayer for the gratification he had conferred upon them by throwing open to them his splendid collection. Our rulers ought to have anticipated Mr. Mayer in purchasing much of it for the nation at large; but it was a pleasing feature of the times that men of science came forward to do what our governors, in the multitude of their avocations, neglected to do for the nation. It was by the sagacity, foresight and public spirit of Mr. Mayer that the collection they had had the pleasure of inspecting had been thrown open to them. He felt sure he was only anticipating the feelings of every one who heard him in proposing on behalf of his fellow-townsmen their cordial thanks for the rich intellectual treat Mr. Mayer had that evening conferred on them.

The Rev. Dr. Hume spoke with the same feeling of thanks in the name of the members of the Historic Society of Lancashire and Cheshire. There was a time when archæology had been sneered at, but that day had passed by, and its usefulness was now generally acknowledged. After specifying some of the leading objects of antiquity in the museum, he said that their history would give an insight into the habits and manners of the people who had passed over the countries in which they were found, thus affording a vast amount of valuable information otherwise unattainable.

Mr. Thomas Wright, M.A., F.S.A., claimed on the part of the visiters and strangers to join to those which had preceded his tribute of gratification with the proceedings of that evening. The books of history which, thirty or forty years ago, were received with implicit faith, were now looked upon with incredulity. The reason was, that during those thirty or forty years people had been employed in investigating the contemporary records of former times, instead of resting satisfied with accounts written by persons who naturally gave a colouring to facts, derived from their own prejudices and opinions. With regard to the records seen in that and similar collections, their colouring was their own, and what those records told them *must* be faithful.

The motion was put by Mr. Alderman Holme as a matter of form, and carried by acclamation.

Mr. Mayer, who was received by the company with the most enthusiastic applause, then delivered an address, of which the following is a brief abstract:—

Ladies and Gentlemen,—I am glad of this opportunity of offering you my sincere congratulations on the determination of our fellow-inhabitants to establish in this town a library for the people. It is an act which will redound to our honour. It is only in public libraries that we can expect to meet with works on the *higher branches* of human philosophy, or science, or mechanical construction. How many biographies have we read wherein men have recorded their regrets that their studies had been retarded for want of knowing what others had written on the subject of their *inquiries*. It has been decreed that a museum shall be attached to the library. This is truly wise, for many branches of inquiry have need of a museum of comparative and illustrative objects. Amid such truths as are just now disclosing themselves so rapidly *around* us, I conceive no man would dare say there are few who are interested in the study of antiquity. Those young men who would now be thought liberally educated must not confine themselves to the mere reading of Latin and Greek, but must add to *those* valuable acquirements general knowledge. I thank you for the honour you have conferred on me personally by your attendance here this evening, but I feel still more pleasure in thinking you are honouring the good cause of education and study.

The proceedings then terminated, and the company dispersed.

15th *April*, 1858. SPECIAL GENERAL MEETING.

JOHN POOLE, ESQ., in the Chair.

The Chairman read the notice convening the Meeting, and stated its object.

It was moved by the REV. DR. HUME, seconded by ALBERT J. MOTT, ESQ., and resolved unanimously:—

That the proposal of Union of the Liverpool Photographic Society with the Historic Society of Lancashire and Cheshire be finally confirmed, on the terms recorded in the minutes of the Special General Meeting held on the 4th ultimo.

14th *July*, 1858. SPECIAL GENERAL MEETING.

EXCURSION TO CHESTER.

On Thursday, the 14th July, the Annual Excursion of the members and their friends took place. The party, consisting of a large number of ladies and gentlemen, visited Chester, leaving Liverpool at a quarter to eleven, a. m. They were met at the Chester Station by the Lord Bishop of Chester, Sir Philip de Malpas Grey Egerton, Bart., M.P., the Rev. F. Grosvenor, Mr. W. H. Ayrton, and other gentlemen, members of the Chester Archæological Society, and proceeded in the first instance to St. John's Church, through which they were conducted by the Rev. Mr. Marsden, the Rector, and the Rev. Mr. Grosvenor: the latter gave a short historical and architectural account of it, describing the changes it had undergone, and relating the various interesting legends of which it is the subject. The Priory adjoining was next visited, after which, at the invitation of Mr. Meadows Frost, the party repaired to that gentleman's house and partook of a slight refection. On proceeding to the Cathedral they were met by the Rev. Canon Eaton, and under his guidance inspected the Lady Chapel, the Chapter House, the Cloisters and Crypts, and the Free Grammar School. A short visit was next paid to the Church of St. Mary-on-the-hill.

At three o'clock the whole party assembled at the Savings' Bank, in the board room of which they partook of a cold collation. Edward Heath, Esq., V.P., presided, and several sentiments having reference to the progress of archæology, literature and science, having been proposed and suitably responded to, the party resumed their inspection of the various objects of antiquarian interest for which Chester is celebrated, including the Roman Bath in Bridge Street, the Walls, &c.; assembling at the Episcopal Palace, on the hospitable invitation of the Bishop, when tea and other refreshments were dispensed. After a day of great interest and enjoyment, the excursion party returned to Liverpool by railway in the evening.

The objects of the excursion were greatly assisted by the Lord Bishop and the Clergy of the Cathedral and City, and by Messrs. Hicklin, Hon. Secretary, Ayrton, Hughes and other members of the Chester Architectural and Archæological Society.

INDEX.

A

Agricola, event in the life of, 47
Albert, M., quoted, 65
Albert, his classification of books, 88
Alfred, King, 50, 54, 55
Algœ, the fructification of, 259
Ali Bey, quoted, 131
Allan, T., donor, 336
Alpha Fund, the, 325
Altar-piece, 281
Altar-piece, at Ghent, 285
Ameilhon, his classification of books, 79
Americans, educated; do they speak better English than we? 45
Ampère, his classification of books, 87
ANCIENT CUSTOMS AND SUPERSTITIONS IN CUMBERLAND, 97
"Ancient Laws and Institutes," referred to, 51
Anderson, R. W., exhibitor, 338
Anderson, T. D., enrolled a member, 339
Anglo-Saxon Antiquities, 59
Anglo-Saxon, the term objected to, 49
Annulus, perfect, seen during the Eclipse, 238
Antiquities, Anglo-Saxon, 59
——————foreign, too little known, 60
——————from Macon, 165
——————pure English, neglected, 51
Archæogical Institute, donor, 335, 346, 350, 351
Archer, Mr. Scott, crowning discovery by, 185
Armour, 304
Art, English, 291; Foreign, 292; French, 287; German, 284; Italian, 279, 294; Modern, 277; Ornamental, Museum of, 276, Water Colour, 301
Artists, English living, 293
Arts, Royal Academy of, 292
Art Treasures' Exhibition at Manchester, 269
Art, works of, general, 303
Ashfield, C. J., author of paper, 143
Aspland, Rev. R. B., author of paper, 345; exhibitor, 345
Athelstan, first styled "Rex Anglorum," 50
Atherton, J., enrolled a member, 350
Australia, great composite track for ships, 246; should it be modified? *ib.*; a suggestion regarding the homeward passage, 246, 247 (*see Icebergs.*)
AUTHORS OF PAPERS.
Ashfield, C. J., 143, 342
Aspland, Rev. R. Brook, 345
Baines, T., 342
Bell, Dr., 344
Buxton, D., 37, 335
Corey, Charles, 183, 349
Cust, Hon Sir E., 131, 352
Danson, J T., 1, 339
Edwards, E., 61, 349
Gibson, A. Craig, 97, 341, 352
Gregson, C. S., 113, 340
Hardwick, C., 352
Higgins, Rev. H. H., 199, 346
Hume, Rev. Dr, 338
Moore, T. J., 265, 346
Robson, Dr., 47, 347
Rundell, W. W, 111, 342
Sansom, Rev. J., 203, 342
Sansom, T., 233, 255, 346, 349
Scharf, George, Jun., 269, 350
Smith, C. Roach, 59, 344
Smith, H. Ecroyd, 165, 338
Thornber, Rev. W., 187, 353
Towson, J. T., 233, 239, 337, 349
Wilkinson, T. T., 169, 231, 349, 353
Wright, J., 207, 354
Ayrton, F., enrolled a member, 350
AZIMUTH CARD FOR THE LATITUDE OF LIVERPOOL, 111, 342

B

Babington, C. C., donor, 350
Bacon, Lord, his classification of books, &c. modifications of, 68, 69
Baines, T., author of paper, 342
Baker, H., F.R.S., cited, 256, *n.*
Banner, Rev. T. B., enrolled a member, 350
Barring-out, a Cumberland Lent frolic, 104
Barry, 291
Barry, Mr. Smith, 279
Bath, H., enrolled a member, 351
Batten, C., enrolled a member, 340
Bean, W., exhibitor, 340, 344
Beda, quoted, 49, 53
Bees, a Cumbrian superstition respecting, 106
Bell, C., enrolled a member, 350
Bell, Dr., author of paper, 344
Bell, Dr. W., donor, 348
Bell, J. G., donor, 337
Beltane fires in Cumberland, 105
Benjamin of Tudela, quoted, 135
Berry, J. R., enrolled a member, 350
Berry, P., enrolled a member, 337
Bewley, A. R., enrolled a member, 350
Binney, Mr., quoted, 188
Birkenhead, remarkable increase in population of, 11
Births, Cumbrian customs at, 102
Blackburn, increase in population of, 12
Boadicea, insurrection of, 47
Boardman, J., donor, 337, 341, 346, 351, 354; exhibitor, 342, 345, 346
Bolton, increase in population of, 12
Bonasone, 297
Book-binding, 307
Bouilland, his classification of books, 71
Boult, Joseph, donor, 341
Bowers, A., enrolled a member, 350
Boy and Dolphin, the, 319
Bradley. T., enrolled a member, 339
Bradley, W. G., enrolled a member, 339
Brass, Buslingthorpe, 203
Bride-waine in Cumberland, 101
Bright, H. A., chairman, 336, 344; exhibiter, 336, 345
Britons, the, description of, 207; dispossessed of the best parts of England, by the Saxons, 208

Brown, T., enrolled a member, 351
Brunet, M., quoted, 65; his assertion respecting Lord Bacon confuted, 66; referred to, 87
Burgess, A., enrolled a member, 351
Burgkmayer, 299
Burk , W., exhibiter, 341, 342
Burnley, Eclipse as seen at, 231
——— increase in population of, 12
Burrowes, Captain, his observations during the Eclipse, 237
Buslingthorpe Brass, 203
Butenschoen, his classification of books, 80
Buttington, battle at, 55
Buxton, D., author of paper, 37; chairman, 345; donor, 345; exhibiter, 339

C

Calder, Rev. W., enrolled a member, 339
California, effect of the discovery of gold in, 41
Cambridge Antiquarian Society, donor, 340
Camera Obscura, inventor of, 184
Camus, his classification of books, 80
Canaletto, 294
Caracci, A., 283, 284, 295
——— L., 275
Carling Sunday, 104
" Carpenter on the Microscope," cited, 259, n
Carrington, R. C , donor, 346
Catherwood, Mr., referred to, 131, 141
Cellini, B., 304
Chadburn, C H., enrolled a member, 337
CHAIRMEN AT ORDINARY MEETINGS.
Bright, H. A.. 336, 344
Buxton, D., 345
Cust, Hon. Sir E., PRESIDENT, 353
Danson, J. T., 335, 339, 341
Heath, E., 353
Howson, Rev. J. S., 350
Kendrick, Dr., 337, 350
Macintyre, Dr., 349
McQuie, P. R., 336, 340, 343, 346
Mayer, J., 348
Sansom, T., 342
Steins, James, 339
Chaloner, T., enrolled a member, 350
Charles I., portrait of, 286
Charms for physical ailments, Cumbrian, 107
Cheney, Mr. E., 297
Cheshire North, fortresses of, 50
Chester Architectural Society, donor, 337
——— a Roman settlement in the time of Ptolemy, 48
Christmas Customs in Cumberland, 103
Chronicle, the, quoted, 50
Church-building, phrases arising from, 43
Clarke, Dr., cited, 138
Classification of human knowledge, 61, 95
Claude, 294
Clay, W., donor, 343
Clement, Claudius, his classification of books, 69
Clergy, the, endowed by Alfred, 54
Coates, Rev. W. H., enrolled a member, 340
Cock-fighting in the Schools of Cumberland, 104
Codex Diplomaticus, quoted, 50
Coins, 307
Coleridge, his classification of books, 84
Collectanea Antiqua, quoted, 59; cited, 167
Collop Monday, 104
Colnaghi, Mr. D., 273
Colouring, transparent, 302
Comber, T., exhibitor. 346
Cooke, A., enrolled a member, 330
Cooke, R., enrolled a member, 360
Copley, 290
Corey, C., author of paper, 183; donor, 319; exhibitor, *ib.*; enrolled a member, 350
Cormouls, Mr., quoted, 171
Correggio, 295
Council, The, exhibitor, 339, 352
Courts-leet, origin and business of, 212
" Crania Britannica," cited, 266
Crivelli, C., 281
Cryptogamia, The, have male and female organs, 259
Cumberland, ancient customs and superstitions in, 97
Cumbrian territorial dignities, 100
Cunningham, Mr. Peter, 273, 287
Curzon's " Visit to the Levant," quoted, 131
Cust, Hon. Sir E., author of paper, 131; chairman, 353; donor, 336, 341, 350; exhibitor, 348
Cuvier, quoted, 65

D

Daguerre, his discoveries in Photography, 184
D'Alembert, his classification of books, 68; an amplification of Bacon's, *ib.*
Danish Armies, composition of, 56; invasion, the real, 57; physiognomy, where still prevalent, 40
Danson, J. T., author of paper, 1; chairman, 333, 335, 339, 341
Darnley, the Earl of, 275
Dannou, his classification of books, 81
Davies, Professor, his correspondence with Swale, 174
Davies, W., enrolled a member, 350
Da Vinci, L., 294
Deane, Mr. C. J., 273
De Bure, his classification of books, 77
Decaisne, cited, 259
Dee, river, poem on, 170
De Lesseps, F., donor, 340
Denis, his classification of books, 82
Derby, the Earl of, 275
De Savigny, C., his classification of books, 66
DESCRIPTION OF ANTIQUITIES FROM MACON, 165
Devana, the settlement of the twentieth legion, 47
Devonshire, the Duke of, 294
Diatomaceæ, the, described, 260; how to examine, 263
Dickenson, Dr., Swale's correspondence with, 173
Dio Cassius, quoted, 49
DIPTEROUS INSECTS OF THE DISTRICT AROUND LIVERPOOL, 199
Distemper painting, 302
Domenichino, 284
Donatello, 294
DONATIONS. *See* LIBRARY *and* MUSEUM.
Donbavand, B., donor, 335; exhibiter, 342, 346, 348; enrolled a member, 339
DONORS. (General.)
London.
Archæological Institute, 335, 346, 350, 351.
Geological Society, 336, 345, 349, 353.
Royal Astronomical Society, 340, 353.
Royal Geographical Society, 336, 340, 342, 349, 353.
Royal Society, 342, 345, 349, 350, 353.
Society of Antiquaries, 343.
Society of Arts, 345, 349, 353.
Statistical Society, 336, 339, 345, 348.
Provinces.
Cambridge Antiquarian Society, 340.
Chester Architectural, &c., Society, 337.
Manchester Literary and Philosophical Society, 345.
Norfolk & Norwich Archæological Society, 353
Somersetshire Archæological and Natural History Society, 353
Surrey Archæological Society, 337.

Yorkshire, West Riding Geological and Polytechnic Society, 340
Liverpool.
Architectural and Archæological Society, 336
Chemists' Association, 339
Compass Committee, 342
Literary and Philosophical Society, 345
Town Council, 339, 348
Scotland.
Royal Society of Edinburgh, 342
Society of Antiquaries of, 335
Ireland.
Geological Society of Dublin, 336, 340, 349
Kilkenny and S. E. of Ireland Archæological Society, 335, 337, 340, 346, 351
Ossianic Society, 337
Royal Dublin Society, 353
Foreign.
Historic Society of Lower Saxony, 351
Smithsonian Institution, 344
Société Archéologique de l'Orléanais, 335, 337, 346, 351
Société des Antiquaires de l'Ouest, 351
Société des Antiquaires de Picardie, 340
Société Impériale d'Émulation d'Abbeville, 353
State Historical Society of Wisconsin, U. S. A., 343, 346, 348
Donors. (Individual.)
Allan, T., 336; Babington, C. C., 350; Bell, Dr. W., 348; Bell, J. G., 337; Boardman, J., 337, 341, 346, 351, 354; Boult, Joseph, 341; Buxton, D., 345; Carrington, R. C., 346; Clay, W., 343; Corey, C., 349; Cust, Hon. Sir E., 336, 341, 350; De Lesseps, F., 340; Donbavand, B., 335; Dunkin, A. J., 343; Edwards, E., 348; French, G. J., 336, 339; Gaskell, Rev. W., 335; Grimmer, W. H., 336; Hardwick, C., 353; Heath, E., 340; Herdman, W., 336, 339, 345, 347, 351, 353; Hinde, J. Hodgson, 351; Hume, Rev. Dr, 335, 345; Illustrated Inventor, Newspaper, Publisher of, 349; Johnson, H., 353; Jordan, Rev. J., 351; Jones, G., 341; Kendrick, Dr., 353; Kirkman, Rev. T. P., 345; Lamb, D., 343; Lancashire Incumbent, A, 345; Lange, D. A., 336; Macintyre, Dr., 349; Mayer, J., 339, 343, 353; Morgan, Rev. R. W., 343; Newlands, J., 339; Neill, Hugh, 343, 348; Perrin, J., 348; Rennie, G., 345; Rhind, A. H., 347; Rowell, G. A., 348; Rundell, W. W., 350; Ryder, J. B., 353; Sansom, Rev. J., 341; Smith, C. R., 335, 348; Stonehouse, J., 336; Wilkinson, T. T., 341, 351; Williams, H., 341; Williams, J., 346; Wright, T., 353.
Drawings, early Italian, 294
Dublin Geological Society, donor, 336, 340, 349
Dunkin, A. J., donor, 343
Dürer, Albert, 299
Dutch Landscape, 286

E

East Coast of England, settled on by the Danes 39
Easter, Cumberland superstitions respecting, 104
Eclipse, as seen at Burnley, 231; as seen near Oxford, 233
Eden, J., enrolled a member, 351
Edwards, E., author of paper, 61, 349; donor, 348
Egbert names Britain "England," 208
Egerton, W., enrolled a member, 340
El Haram, Site of, 140
Ellesmere, the Earl of, his contributions to the Manchester Exhibition, 275
Elizabeth, queen, 288
El Sakhra, 131
Embroidery, 307
Emerson, R. W., quoted, 41
Enamels, 306
Encyclopædia Britannica, quoted, 67
England, after the departure of the Romans, [illegible] before the Norman conquest, little known [illegible] 51; slavery and villenage in, 207; so named [illegible] Egbert, 208; falls under the Danish yoke, [illegible] low moral state of the people, 208; the name [illegible] this island in Beda's time, 49
English, the early, their love of personal ornaments, 208
English language, the, not extirpated by the Norman or Norman conquest, 37
English people, the, their colonising spirit, 4[illegible]
Engravings, 295; early German, 297; rare English, *ib.*; on wood, 298; modern, 299
Esne, 209
Etching, 299
Eudamidas, testament of, 287
Exhibitions. The Great, 269; Paris Industrial, 270; Mediæval, (London), *ib.*; of the Archæological Institute, *ib.*; Dublin, 271; Sydenham, *ib.*; New York, *ib.*; Paris, 1855, *ib.*; Manchester Art Treasures', 272; number of pictures in, 309; other particulars, *ib.*, 327; general remarks on, 312; working classes did not visit, 314, 325; distinctive features of, 317, 324; books printed, illustrative of, 219, 322
Exhibitors.
Anderson, R. W., 338
Aspland, Rev. R. Brook, 345
Bean, W., 340, 344
Boardman, J., 342, 345, 346
Bright, H. A., 336, 345
Burke, W., 341, 342
Buxton, D., 339
Comber, T., 346
Corey, C., 349
Council, The, 339, 352
Cust, Hon. Sir E., 348
Donbavand, B., 342, 346, 348
Forrest, J. A., 349
Gibson, A. Craig, 341
Gregson, C. S., 340, 346
Guyton, J., 346
Hancock, T. S., 346
Hardwick, C., 352
How, J., 354
Hughes, J. R., 352
Hume, Rev. Dr., 335, 336, 354
Jacob, J. G., 344
Kendrick, Dr., 337, 352
Macintyre, Dr., 342, 347
McQuie, P. R., 347
Mayer, J., 343, 347, 354
Moore, Rev. T., 337
Moore, T. J., 346
Mott, Albert J., 348
Oxley, F., 341
Peacock, John, 347
Potter, W., 342
Sansom, T., 341, 342, 346, 354
Smith, H. Ecroyd, 347.
Tapping, J., 344
Traer, P. G., 349
Eyre, Mr., his classification of books, 93

F

Fairbairn, Mr., 326
Fairbairn, W., enrolled a member, 337
Fall of the Angels, 280
Farnham, action at, 55
Fawcett, J., enrolled a member, 351
Fealty, its object and effect, 216
Fejérváry collection, 279

Fergusson, Mr., cited, 131, 138, 140
Ferns, fecundation of, 258
Ferrera, Mazzolino di, 275, 283
Feudal observances in Cumberland, remaining, 99; system, introduction of, 213
Fibulæ, called German, rarely found in England, 59; from Kertch, 60
Figsue, a Cumberland mess, 104
Flaxman, 303
FLORA OF PRESTON AND ITS NEIGHBOURHOOD, 143
Foard, J. T., enrolled a member, 350
Fontanini, G., his classification of books, 75
Forrest, J. A., exhibitor, 349; enrolled a member, 351
Fossil shells, found in the Fylde district, 195
Fowler, C., enrolled a member, 351
Fox Talbot, Mr., his discoveries in photography, 184
Francke, I. M., his plan of classifying books, 79
French, G. J., donor, 336, 339
French school, 287
Fresco, fragment of, 280
Frost, M., enrolled a member, 340
Funeral customs in Cumberland, 103
FURTHER REMARKS ON THE HISTORY OF THE TWO COUNTIES AND ITS MATERIALS, 47
FURTHER MEMORIALS OF SWALE, 169
Fylde district, geology of, 187

G

Gainsborough, 289, 290
Garnier, J., referred to, 72; his classification of books, *ib.*
Gaskell, Rev. W., donor, 335
Geological Society, donor, 336, 345, 349, 353
GEOLOGY OF THE FYLDE DISTRICT, 187
Geographical terms, suggestive of the origin of a language, 39
German Antiquarians, their labours, 51
Gesner's classification of books, 64
Ghirlandajo, 294
Giants, memorials of, in Cumberland, 108
Gibson, A. Craig, author of paper, 97, 341, 352; exhibitor, 341
Girard, l'Abbé, his whimsical classification of books, 75
Girault, his classification of books, 83
Gleadowe, Rev. R. W., enrolled a member, 337
Glover, J., enrolled a member, 351
Goddard, Mr., his photagraphic discoveries, 185
Gore House, exhibition at, 273, *n.*
Gregson, C. S., author of paper, 113, 340; exhibitor, 340, 346
Grimmer, W. H., donor, 336
Grosvenor, Rev. F., enrolled a member, 337
Guercino, 275
Gulliver, T., enrolled a member, 351
Guyton, J., exhibitor, 346

H

Hallé, Mr. Charles, 277
Hancock, T. S., enrolled a member, 339; exhibitor, 346
Harding, J., enrolled a member, 351
Hardwick, C., author of paper, 352; exhibitor, *ib.*; donor, 353
Hart, Dr., quoted, 42
Haydon, 292
Heath, E., chairman, 353; donor, 340
Henfrey, Professor, cited, 259, *n.*; 260, *n.*
Henri Deux Ware, 306
Henry, Dr., his account of the condition of English slaves, 211
Herbert, Right Hon. S., 280
Herdman, W., donor, 336, 339, 345, 347, 351, 353
Heriots, curious methods of paying, 98
Herschel, Sir J., cited, 185
Hertford, the Marquess of, his contributions to the Manchester Exhibition, 276, *n.*
Hickson, J., enrolled a member, 351
Higgins, Rev. H. H., author of paper, 199
Highlanders, their language destined to be supplanted by the English, 37
Hinde, J. Hodgson, donor, 353
HISTORICAL SKETCH OF PHOTOGRAPHY, 183
History of the two counties, materials for, 47, 347
Hogarth, 289
Holy Sepulchre, church of, its site, 138
Holbein, 287
Holmes, Mr. E., 273
Homage, in what it consisted, 215
Horne, Mr. Hartwell, on the classification of books, 85
How, J., exhibitor, 354
Howson, Rev. J. S., chairman, 350; quoted, 43
Hughes, J. R., enrolled a member, 339; exhibitor, 352
Hume, Rev. Dr., author of paper, 336; donor, 335, 345; exhibitor, 335, 336, 354; quoted, 45, *n.*
Hunt, Mr. Robert, his discoveries in photography, 185
Hydra, the, discovered by Leeuwenhoek, 256

I

Ice, sheet or field, defined, 240; in the southern ocean, where met with, 241; an enormous body of, 242; Dr. Scoresby's opinion respecting, 243
ICEBERGS IN THE SOUTHERN OCEAN, 239, 337
Icebergs, defined, 240; largest in the southern ocean, 241; the birth-place of the northern, *ib., n.*; in the southern, their drift and rate of progress, 243; when most dangerous, 244; their uncertain appearance, 244; where most met with on homeward passages, 245; and when, *ib.*; temperature influenced by proximity to, 247; never seen in October, 249
Indian Court, the, 303
Ini, laws of, referred to, 58
Insects, dipterous, of Liverpool district, 199
Invasions of England, prevented National progress, 52
Inventor, Newspaper, proprietor of, donor, 349
Irish, the educated; do they speak better English than we? 45
Isaac, J. R., enrolled a member, 351
Ivories, 278
Ivory, carved, 307

J

Jacob, J. G., exhibitor, 344
Jago, J. R., enrolled a member, 350
Jena Repertorium, the, its classification of books, 82
Johnson, H., donor, 353
Jones, C., enrolled a member, 351
Jones, D., enrolled a member, 351
Jones, G., donor, 341
Jordan, Rev. J., donor, 351
Josephus, quoted, 133, 141

K

Keith, W., enrolled a member, 351
Kendrick, Dr., chairman, 337, 350; donor, 353; exhibitor, 337, 352
Kertch, antiquities from, 59
Kilkenny and S.E. of Ireland Archæological Society, donor, 335, 337, 340, 346, 351

Hume's Two Essays on Spinning and Weaving, &c., 335
Inquiry into origin of Liverpool Town-dues, 341
Johnson's "Knowledge; Health and Happiness; Fire and Water," 353
Journal kept in the British Army under Earl Moira, 341
Kendrick's Mediæval Vessels in the form of Knights, 353
Kirkman's, Rev. T. P., Two Essays, from the Philosophical Transactions, 345
Lange's "Lord Palmerston and the Suez Canal," 336
Lesseps, de, Opinion of the Commercial classes of Great Britain on the Suez Canal, 340
Letter on the return of Lord Melville to power, 341
Notices of the Cholera Morbus, 1831, 341
Paine's Address to the Addressers, 341
Pamphlets relating to Philadelphia, 343
Pamphlets relating to Wisconsin, 348
Rhind's Law of Treasure-Trove, 347
Right of Bishops to sit and vote in House of Peers, 341
Rowell's Beneficent distribution of the sense of pain, 348
The Parochial System, and the clerical year. By a Lancashire Incumbent, 345
Tribute to the early settlers of Pennsylvania, 343
4. *Reports and General Annuals.*
Geological Survey of Wisconsin, 348
Lady's and Gentleman's Diary, 1856, 341
Liverpool Baths and Wash Houses, 1856, 339
——— Compass Committee, Reports of, 1855-56, 342
——— Police Establishment, 1857, 348
———Town Improvements, 341
Odd Fellows' Magazine, 353
Smithsonian Institution, 344; list of Publications of Learned Societies, and Pamphlets in Library of, 345
5. *Maps, Plans, Broadsides, &c.*
Ancient House at Blackwall, said to have been the residence of Sir W. Raleigh, Etching of, 341
Bell's Chronological Chart, 348
Boardman, J., Letter on Liverpool Library, 354
Buslingthorpe Brass, Rubbing of, 341
Carrington's ten Charts of circumpolar Stars, 346
Croft Brass, Rubbing of, 341
Illustrated Inventor, Newspaper, 349
Jupiter, Engraving of, 346
Map and Plan of Madison and the Four Lake Country, 348
Map of Milwaukie, 348
Map of the course of the Eclipse, 15th March, 348
Monument to Nelson, at Old Swan, Engraving of, 341
Pedigree of the Family of Greenhalgh of Brandlesome, 337
Prospectus of Manx Society for publication of national documents, 351
Rennie's Plan of a Breakwater for Liverpool, 345
Rundell's Azimuth Card, 350
Saturn, Engraving of, 346
The Dingle, a Poem, by W. Roscoe, 346
Township Map of the State of Wisconsin, 348
Light, discoveries of Priestley, &c., respecting, 183
Lindsay, Lord, enrolled a member, 346; his classification of books, 92
Linnæan Society, Proceedings of, cited, 261, *n.*
Lister, Mr. J. J., greatly improved the microscope, 256
Lithographs, 301
Liverpool Architectural and Archæological Society, donor, 336; Azimuth card for, 111; Chemists' Association, donor, 339; Compass Committee, donor, 342; diptera of, 199; increase in population of, 13; lepidoptera of, 113; Literary and Philosophical Society, donor, 345; Royal Institution of, 925; Town Council, donor, 339, 348
Localised superstitions, Cumbrian, 109
Lockey. Rev. F., enrolled a member, 351
Louisiana, U. S., the French language in, almost displaced by the English, 42
Lowth, Bishop, quoted, 44, *n.*
Lyell, Sir G., on geological phenomena, quoted, 193

M

McFie, Mr. R. A., his collection of Antiquities, 165
McInnes, J., enrolled a member, 351
Macintyre, Dr., chairman, 349; donor, 349; exhibitor, 342, 347
Mackie, J., enrolled a member, 340
McNicoll, J., enrolled a member, 351
Macon, account of, 165; antiquities from, 165
McQuie, P. R., chairman, 336, 340, 343, 346; exhibitor, 347
Maes, N., 275
Mammalian Remains discovered at Wallasey, 265, 346
Manchester Art Treasures' Exhibition, on the, 269, 350
Manchester Literary and Philosophical Society, donor, 345
Manchester, the Duke of, 275
Manors, their institution and privileges, 212; number held by William the Conqueror, 213
Mantegna, A., 281
Marc Antonio, 297
Marchand, Prosper, his classification of books, 74
Maries, the three, 284
Mark system, the, 52
Marriage customs in Cumberland, 101
Martin, Gabriel, referred to, 72; his classification of books, 77
Mayer, J., chairman, 348; donor, 339, 343, 353; exhibitor, 343, 347, 354
Mayhem, appeal of, 217
Mawdsley, H., enrolled a member, 351
Medallions, 307
Members Enrolled.—Anderson, T. D., 339; Atherton, J., 350; Ayrton, F., 350; Banner, Rev. T. B., 350; Bath, H., 351; Batten, C., 340; Bell, C., 350; Berry, J. R., 350; Berry, P., 337; Bewley, A. R., 350; Bowers, A., 350; Bradley, T., 339; Bradley, W. G., 339; Brown, T., 351; Burgess, A., 351; Calder, Rev. W., 339; Chadburn, C. H., 337; Chaloner, T., 350; Coates, Rev. W. H., 340; Cooke, A., 350; Cooke, R., 350; Corey, C., 350; Davies, W., 350; Donbavand, B., 339; Eden, J., 351; Egerton, W., 340; Fairburn, W., 337; Fawcett, J., 351; Foard, J. T., 350; Forrest, J. A., 351; Fowler, C., 351; Frost, M., 340; Gleadowe, Rev. R. W., 337; Glover, J., 351; Grosvenor, Rev. F., 337; Gulliver, T., 351; Hancock, T. S., 339; Harding, J., 351; Hickson, J., 351; Hughes, J. R., 339; Isaac, J. R., 351; Jago, J. R., 350; Jones, C., 351; Jones, D., 351; Keith, W., 351; Lafone, H., 351; Leigh, Major, 339; Leithead, H. F., 351; Lewthwaite, J., 351; Lindsay, Lord, 346; Lockey, Rev. F., 351; McInnes, J., 351; Mackie, J., 340; McNicoll,

J., 351; Mawdsley, H., 351; Mercer, N., 351; Mercier, J. D., 350; Moore, Rev. R. R., 337; Moss, J. B., 351; Moult, W., 337; Newlands, J., 351; Oxley, F., 337; Ralstone, J., 351; Rathbone, R., 351; Rooke, Rev. W. J. E., 351; Rowlandson, W., 351; Sadler, J. N., 351; Shimmin, H., 337; Shute, A., 344; Slade, Rev J., 339; Stevens, J., 351; Taylor, J. P., 351; Thomas, G., 351; Thompson, H., 345; Wardell, W., 339; Watts, Sir J., 340
Mammi, Simone, 280
Mercer, N., enrolled a member, 351
Mercier, J. D., enrolled a member, 350
Merlin, his classification of books, 90
Meyrick, Col., 304
Michael Angelo, 281, 294
Micrographia, the, 256
Micrometer, the, described, 263
MICROSCOPE, ON THE, AS APPLIED TO NATURAL HISTORY, 255, 346
Microscope, the, modern improvements in, 255; superiority of British glasses, 258
Middleton, Conyers, his classification of books, 76
Milanese school, early, 282
Mirror, Etruscan, 278
Misers, the, 285
Mohl, on the vegetable cell, quoted, 260
Monastic Libraries, Catalogues of, 61; in middle ages, 62
"Monumenta Historica Britannica," referred to, 51
Moore, Mr. Edward, his letter on the Eclipse, 235
Moore, Rev. R. R., enrolled a member, 337
Moore, Rev. T., exhibitor, 337
Moore, T. J., author of paper, 265; exhibitor, 346
Morgan, Rev. R. W., donor, 343
Mosque of Omar, 131
Moss, J. B., enrolled a member, 351
Mott, A. J., exhibitor, 348
Moult, W., enrolled a member, 337
Müller, 303
Mulready, 303
Murillo, 284
Murray, Mr., 278, 288
MUSEUM, ADDITIONS TO.
Casts of Seals in gutta percha, 337
Lucky-stone, 351
Music, at Manchester Exhibition, 277

N

Nations, number of, in England in the time of Beda, 50
National literature, English, when it began, 52
National Review, the, 322
Natural History, progress of, 257
Naudé, Gabriel, his classification of books, 70
Need-fire, a Cumbrian charm, 106
Neill, Hugh, donor, 343, 348
Newcastle, the Duke of, 275
Newlands, J., enrolled a member, 351; donor, 339
Newport, G., cost of his microscope, 255
Newtonian system, the, 171
Neife, definition of a, 217; position of a, 218
Niepce, M., discoveries of, in photography, 184
Nobert, M., his test objects for microscopic glasses, 258
Nodier, C., quoted, 78
Norfolk and Norwich Archæological Society, donor, 343
Norman, a Latin dialect, 39
Normans, the, their brutal cruelty, 214
North Western division of England and Wales; area and population of, 1; increase per cent. in town population of, 10; in country population, 14, 22. Total population of, probably not less than that of all Scotland, 25
Northwick, Lord, 281
NOTES ON THE BUSLINGTHORPE BRASS [illegible]
NOTES ON THE CLASSIFICATION OF HUMAN KNOWLEDGE, 61, 349; characteristics of certain schemes, 78

O

Ocean, southern, icebergs in, 239
Olenin, his classification of books, 83
Omens regarded in Cumberland, 105
ON THE SO-CALLED ANGLO-SAXON ANTIQUITIES DISCOVERED NEAR KERTCH, 59, 344
Organic remains, found in the Fylde district, [illegible]
Osborne, Hon. and Rev. S G., cited, 260
Ossianic Society, donor, 337
OUR MOTHER-TONGUE IN OUR FATHER-LAND, [illegible] 335
Overstone, Lord, president of the Manchester Exhibition, 275
Oxford, Eclipse as seen near, 233
Oxley, F., enrolled a member, 337; exhibitor, [illegible]

P

Paalstabs, 166
Painting on glass, Roman, 278
Pandora, Barry's picture of, 291
Parent, his classification of books, 81
Paris system of classifying books, 87
Parmigianino, 283
Passavant, Dr., 312
Paul Veronese, 283
Peacock, John, exhibitor, 347
Perrin, J., donor, 348
Perugino, 281, 294
Phenomenon, curious, at Burnley, during the Eclipse, 232
Phillips, Professor, his observations during the Eclipse, 237
Philosophical Transactions, the, cited, 256
Photography, historical sketch of, 183
Pictures, number of, in Great Britain, 311
Plate, 306
Pleurosigma Hippocampus, markings on the shells of, 262
Polarized light, in connexion with the microscope, 264
Poole, J., chairman, 357
POPULATION OF LANCASHIRE AND CHESHIRE FROM 1801-51, PART II, 1, 339
Porta, B., discoverer of the camera obscura, 184
Portrait Gallery, 287
Potter, W., exhibitor, 342
Preston, Flora of, 143
Pretsch, discoveries of, respecting light, 186
Prince Consort, the, quoted, 274; his contributions to the Manchester Exhibition, ib.; 285
Printers, early, classed lists of, 64
Printing in colours, 299
Ptolemy, quoted, 47, n.
Pulszky, Mr., 278

Q

Quarterly Review, the, quoted, 321
Queen, the, 275, 282, 286, 287, 302, 303, 304, 305, 307
Quekett, J., cited, 258 n.

R

Railway system, new names introduced by the, 43
Ralstone, J., enrolled a member, 351
Ramsey, Rev. A., quoted, 39, n.
Raphael, 281, 294, 319
Rathbone, R., enrolled a member, 351
Religious differences, their operation in England, 52

Rembrandt, 286, 300
Reni, Guido, 275
Rennie, G., donor, 345
Reynolds, 290, 300
Rhind, A. H., donor, 347
Rhodius, John, his classification of books, 69
Richard II., portrait of, 280, 287
Richardson's account of El Sakhra, 132
Robinson, Professor, cited, 138
Robson, Dr., author of paper, 47
Romans, the, ignorant of sea-faring pursuits, 40; position of their fortresses, *ib.*
Romney, 291
Rooke, Rev. W. J. E., enrolled a member, 351
Rowell, G. A., donor, 348
Rowlandson, W., enrolled a member, 351
Royal Astronomical Society, donor, 340, 353
Royal Dublin Society, donor, 353
Royal Geographical Society, donor, 336, 340, 342, 349, 353
Royal Society, donor, 342, 345, 349, 350, 353
Royal Society of Edinburgh, donor, 342
Rubens, 286, 299
Rundell, W. W., author of paper, 111; donor, 350
Ruysdael, Jacob, 275
Ryder, T. B., donor, 353

S

Sadler, J. N., enrolled a member, 351
St. Christopher, wood-cut of, 298
Salerno, Andrea da, 275
Salmon-hunting in Cumberland, 100
Sansom, Rev. J., author of paper, 203; donor, 341
Sansom, T., chairman, 342; author of papers, 233, 255, 346, 349; exhibitor, 341, 342, 346, 354
Saxon, the term objected to, 49
Saxons, the, invited to Britain, 207; vanquish the Britons, 208
Scharf, Mr., Geo., Jun., 273; author of paper, 269
Scheele, a discovery of, 183
Scots, the ancient hostility between them and the Cumbrians, remains of, 100
Sea-beaches, ancient, remains of, 192
Seal, found at Macon, described, 168
Sebastiano del Piombo, 282
Shakespere, quoted, 44; portrait of, 288
Shells, strata in which found, 191
Shimmin, H., enrolled a member, 337
Shute, A., enrolled a member, 344
Signorelli, 280
Slade, Rev. J., enrolled a member, 339
SLAVERY AND VILLENAGE IN ENGLAND, 207, 354
Slaves, foreign or black, deemed slaves in England, 225; instances, *ib.*; opinions of the Judges, 226; Lord Mansfield's judgment, 228
Smith, C. R., author of paper, 59; donor, 335, 348
Smith, H. Ecroyd, author of paper, 165; exhibitor 347
Smith, Rev. W., cited, 263, *n.*
Smith, W., 273
Smithsonian Institution, donor, 344
Société Archéologique de l'Orléanais, donor, 335, 337, 346, 351
———des Antiquaires de l'Ouest, donor, 351
———des Antiquaires de Picardie, donor, 340
———Impériale d'Emulation d'Abbeville, donor, 353
Society of Antiquaries, donor, 343
Society of Antiquaries of Scotland, donor, 335
Society of Arts, donor, 345, 349, 353
SOLAR ECLIPSE OF MARCH 15TH, AS SEEN NEAR OXFORD, 233, 349
SOLAR ECLIPSE OF MARCH 15TH, AS SEEN AT BURNLEY, 231, 349
Solomon, vastness of his sacrifices, 133
Somersetshire Archæological and Natural History Society, donor, 353
Soulages collection, 293, 308, 309
Specimens, Geological, found in the Fylde district, 194
Stanging in Cumberland, 104
Stanley, Mr. A. P., his tour in the Holy Land, 131
Statistical Society, donor, 336, 339, 345, 348
Statuette, ancient silver, 166
Steains, J., chairman, 339
Steen, Jan, 275
Stewart, Dugald, his opinion of Lord Bacon's system of classifying books, 67
Stevens, J., enrolled a member, 351
Stonehouse, J., donor, 336
Stothard, 303
Sulphur impressions, 296
Suminski, cited, 258
Supernatural beings believed in by the Cumbrians, 108
Surrey Archæological Society, donor, 337
Swale, J. H., further memorials of, 169; his death, 176; his MSS., *ib.*; extracts from, 177; to be deposited with Historic Society, 182
Sword, Roman, 278
Syrphidæ, the, habits, &c., of, 199

T

Tacitus, quoted, 47
Tapestry, 308
Taylor, J. P., enrolled a member, 351
Taylor, Mr. Tom, 320
Terburg, 275
Theow, 209
Thomas, G., enrolled a member, 351
Thompson, H., enrolled a member, 345
Thompson, Joseph, a Cumbrian legend of, 107
Thornber, Rev. W., author of paper, 187
Thuret, cited, 259
Thwaites, Mr., quoted, 261
Times Newspaper, cited, respecting the eclipse, 235; quoted, 325
Tintoretto, 283
Titian, 283, 298
Topping, J., exhibitor, 344
Towson, J. T., author of papers, 233, 239, 337, 349
Traer, P. G., exhibitor, 349
Trefler, Florian, his classification of books, 65
Trembley, M., his account of the *hydra*, 256
Turner, 300, 302

U

Ulster Journal of Archæology, quoted, 45 *n.*
Usipians, meeting and flight of, 48

V

Van Dyck, 275, 286
Van Eyck, brothers, 285
Vasari, 280
Vases, Greek, 278
Vegetable cell, the, anatomy and physiology of, 260
Velasquez, 284
Venus, statue of, 278
Verse, Lord Bacon's definition of, 68
Vexillarii, the, 48
Villeins, description of, 217; not eligible as jurors, 219; how they might be recovered, *ib.*; how they might obtain their liberty, *ib.*; manumission of, 222; their numbers, 229
Villenage, assumed origin of, 211; influence of the Romish Church in abolishing, 224; its gradual extinction, 225

Virgin and child, brass figure of, 163
Vivian, Mr. 281
Von Schlegel, F., quoted, 38

W

Waagen, Dr., 281, 312
Wallasey, mammalian remains discovered at, 265
Ward, Lord, 275
Wardell, W., enrolled a member, 339
Waring, Mr. J. B., 273
Watches, 306
Water-colour drawings, 301
Watts, Sir J., enrolled a member, 340
Wellesley, Dr., collection of, 294
Welsh, the, destined to be supplanted by the English, language, 37
Wenman, Mr., cited, 262
West, Benjamin, 291
Westminster Review, quoted, 45 n
Wilkie, 303
Wilkinson, T. T., author of paper, 169, 231, 339, 353: donor, 341, 351
William the Conqueror, manors of, 213
Williams, H., donor, 341
Williams, J., donor, 346
Wilson, 289
Wilson, Dr. W. D., his classification of books, 93
Wisconsin State Historical Society, donor, 343, 346, 348
Wolsey, Cardinal, hat of, 307
Wood-engraving, 298
Worsäae, Professor, quoted, 39
Wouvermans, 275
Wright, J., author of paper, 207, 354
Wright of Derby, 289
Wright, T., donor, 353

Y

Yarborough, the Earl of, 275
Yeates, Mr. John, on the Eclipse, cited, 235
Yorkshire, West Riding and Polytechnic Society, donor, 340

Z

Zoller, Dr. E., quoted, 65

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